Published every Saturday by the Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa., with editorial and executive offices: 30 Church Street, New York, N. Y., and 105 West Adams Street, Chicago, Ill.

Subscriptions, including 52 regular weekly issues, and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free. United States, U. S. possessions and Canada: 1 year, $6.00; 2 years, $10.00; foreign countries, not including daily editions: 1 year, $8.00; 2 years, $14.00.

Single copies, 25 cents each.

H. E. McCandless, Circulation Manager, 30 Church St., New York, N. Y.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

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GENERAL ARTICLES

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with "Union" AUTOMATIC SIGNALS

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RAILWAY AGE

The Break-Down of The Wage Negotiations

By their refusal to make any concessions in the highest wage rates in history, by refusing to entrust the merits of their case to arbitration, and by calling for a strike vote, the railway labor executives have taken at least four important steps, some of them with tragic possibilities, viz.:

1. They have, even more deliberately than ever before, ignored the plight of the many thousands of furloughed younger employees, in the interest of peak wages for the "old heads."

2. They have made a farce of the much vaunted "collective bargaining" which the public had been deluded into believing had reached a pinnacle of perfection in the railroad industry under the Railway Labor Act.

3. In their refusal to accept arbitration, they have confessed that, weighed on its merits before impartial judges, their case had no chance of victory.

4. They have imperilled the railway industry and its hope of providing employment for their members in future by exposing it to the danger of internal warfare in the face of depression and competition which have already succeeded in destroying railroad employing power by almost 50 per cent.

The Facts of the Case

The facts of the present wage case are simple:

a. With the increases in rates of pay granted a year ago, the railway employee fortunate enough to hold a job today is enjoying the highest pay in history. (Average weekly earnings in the first quarter of the current year were $34.72, as compared with $33.29 in 1937, $27.09 in 1932 and $32.68 in 1929). Measured in purchasing power, the 1938 weekly wage is 6 per cent above that of 1937, 23 per cent above that of 1932, and 27 per cent above that of 1929.

b. In contrast to the fortunate situation of those employees able to hold their jobs, more than a quarter of a million railway employees have been furloughed during the past year and are receiving no income whatsoever. A moderate reduction in the wage rates the railroads are forced to pay would permit the immediate reemployment of many of these furloughed workers. (The railroads have plenty of maintenance and other work which they would quickly undertake, if they could find the money to pay for it.)

c. The owners and the creditors of the railways are receiving next to nothing on their investment in a 20-billion-dollar plant. (In the first seven months of this year the rate of return earned on the investment was only 0.84 per cent. Railroads having one-third of the mileage of the country are admittedly bankrupt and an additional one-third of the mileage is so near bankruptcy that the difference can scarcely be distinguished.)

Railroad rates were increased last spring, but the increases allowed were but a drop in the bucket in comparison with the railroads' needs for revenues. Every interest in any way connected with the industry, save one alone, is far worse off than it was a year ago. Junior employees have lost their jobs, investors have seen their meager returns dwindle to practically nothing, railway patrons are paying higher rates for railway services, manufacturers who supply railway materials and their employees have seen railway patronage decline by two-thirds. Meantime, the employees who have jobs are better off by far even than they were before a depression had ever been dreamed of.

A Situation That Does Not Make Sense

The situation does not make sense, either morally or economically. Even the "old heads" themselves will suffer if present conditions continue (as they have already suffered on the Rutland), because many railroads are not earning even operating expenses and cannot long continue to keep going without some relief. Moreover, what is to become of the job-giving power of the railroad industry ten years hence with its present starvation for lack of an inflow of capital?

Morally, there is no fairness in one narrow interest in the railroad industry continuing in clover at the expense of every other interest in the business. Economically, such one-sided favoritism throws the whole structure out of balance, breeding depression and misery for everybody.

The prospect of a strike is not pleasant to contemplate. However, it is not nearly so unpleasant nor so certain to lead to disaster as would be the continuance of present unjust wage scales. As Thoreau said, "A man sits as many risks as he runs" and, in this instance, to run the risk of a strike is much less dangerous than to sit the risk of present wage scales.

We hope that railroad managements will now overcome their reluctance to make known the really significant facts as to wages *and working conditions* in the railroad industry. Let the public know what the unions are getting away with themselves in the way of big

money and easy hours—and what the referees of the National Adjustment Board have been helping them get away with in the way of pay for work not done; and in forcing the reinstatement of Rule G violators and other employees dismissed for good cause. This wage case will be settled in the court of public opinion—and the sooner the railroads begin to get the facts abroad, the surer and swifter will victory come for them, and for all the other interests which have so long been victimized by union policy.

A Failure of Railway Management

The *Railway Age* has said before and repeats now that ineffectiveness in dealing with its labor problem has been the one great failure of railroad management. We have supported this statement with the simple facts that between 1916 and 1938 output of traffic units per employee-hour increased about 70 per cent, while average wage per hour worked increased 182 per cent. The increase of about 70 per cent in output per employee-hour demonstrates efficiency in the use of capital, facilities and labor. But even if traffic had not declined so much owing to the depression, it is questionable whether the industry could have increased its output per employee-hour enough to have stood an increase of 182 per cent in average wage per hour; and as the depression still continued in 1937 there was then no economic justification for advancing the wages then being paid. This being the case, it was inevitable that the subsequent decline of business and these advanced wages should prove disastrous.

The advances in wages to which management agreed in 1937 were the culmination of a long series of mistakes which began when the managements of some railways joined with the labor unions in 1926 in getting the Railway Labor Act substituted for the labor provisions of the Transportation Act creating the Railroad Labor Board. Management must now face the results of its mistakes, and especially its mistakes in agreeing to advances in 1937. By the policy followed the labor leaders have been encouraged by management to believe it lives in mortal terror of them and can be bluffed into accepting almost any wages, working conditions and interpretations of working conditions they may demand. Management consequently at last is faced with the fact that if wages are not reduced there may be general railroad bankruptcy, strike or no strike.

A Disappointing Labor Leader

The attitude assumed and statements made by some of the labor leaders have been most disappointing. There have been those, and at times we have been among them, who have regarded George M. Harrison as the "white hope" of both the railroads and their employees who was going to bring about understanding and co-operation between them that would be beneficial to all concerned. He was the first head of a railway labor union energetically to enter the fight against subsidized and unregulated competition of carriers by highway and waterway. He long seemed to realize, and we believe he still realizes, that only a prosperous railroad industry can provide large employment at reasonable wages. But he has proved, like most intelligent and naturally fair men, to have a great deal more of intelligence and natural fairness than of courage. During the wage controversy this year he has been as unreasonable and demagogic in his attitude and utterances as even A. F. Whitney.

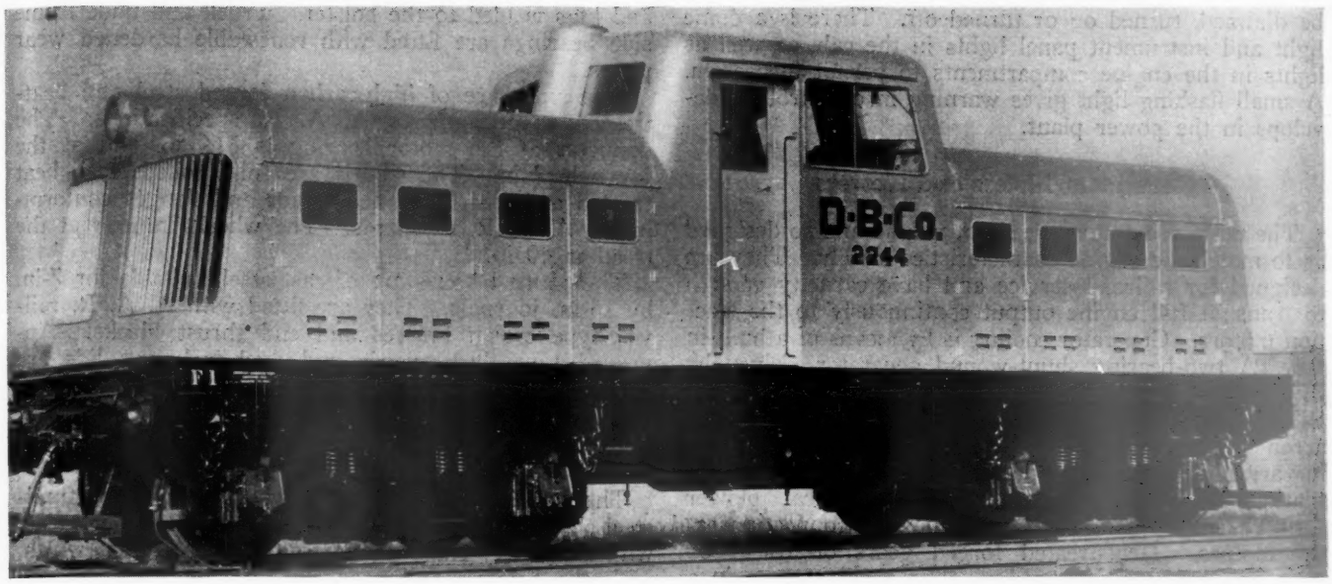
This has been largely because Whitney had previously been putting him on the spot by charging him with being too much disposed to co-operate with the railways. It was Harrison who made the now notorious statement, "We will not give them the whiskers from our last shave." He has urged more strongly than anybody else that it is the duty of railway managements to pay what he calls "living wages" even if this will prevent the earning of anything for dividends, or even interest. He knows the managements do not own the railways, and would be faithless to their security-owners if they voluntarily agreed with the labor leaders to thus sacrifice them. He has timidly let Whitney force him to play the game of labor politics as recklessly as any other labor politician and shown he lacks the statesmanship that many had attributed to him.

Let Public Sentiment Decide

There was a lot of talk after the wage advances last year about future peace and co-operation between railway labor leaders and managements. Can there still be any reasonable hope of it as long as these same labor leaders, after having been granted the highest wages in history last year, continue stubbornly this year to refuse any concessions whatever when the railroad industry is in such a desperate condition?

Partly owing to existing conditions, partly to improvements in service, partly owing to intelligent and extensive public relations work, the sentiment of the public toward the railroad industry is now more friendly than at any time in a half century. But a favorable public sentiment is in one respect like anything else—it is of no value whatever unless relied upon and used. The present wage controversy affords the railroads an unprecedented opportunity to test whether there is a public sentiment sufficiently intelligent and fair to give needed backing to them when in a great controversy, and perhaps in a great strike, they need its support.

We do not believe there will be a strike, because we believe the labor unions know if the railroads stand unitedly and courageously together a strike in 1938 would be as completely lost as was the nation-wide shop employees' strike in 1922 when the railways did stand unitedly and courageously together. But, unless a reasonable reduction of wages can be secured otherwise, the time has come for the railroads squarely to face the issue of a strike. It is incredible they could lose more by a strike than they certainly would by maintaining present wages under present conditions.



Davenport-Besler 760-Hp. Diesel-Electric Switching Locomotive

Davenport-Besler Builds 105-Ton Diesel-Electric Switcher

Locomotive power plant consists of four Caterpillar 190-hp. Diesel engines with electric drive to all wheels

A 105-ton, 760-hp. Diesel-electric locomotive has recently been constructed by the Davenport-Besler Corporation, Davenport, Iowa, which incorporates a number of unique features of design, primarily the use of multiple Diesel-electric generating units which furnish power to electric motors driving all truck wheels. In this case, four Caterpillar Diesel engines, each rated at 190 hp. and directly connected to a G. E. electric generator, supply power to four G. E. motors geared to the truck wheels.

The new Davenport-Besler switcher consists of two four-wheel motor-driven trucks which support a heavy built-up structural-steel underframe carrying the main Diesel engines, main generators, auxiliary equipment, engine hoods and the engineman's cab. The cab is centrally located, contains the necessary electrical control apparatus, instruments, brake valves and throttle controls and has an elevated cab floor to provide a large field of vision for the engineman. Engines, generators, auxiliary equipment, control apparatus and operating controls are located and arranged to permit maximum accessibility and convenience in operation.

The various component units have been selected with a view to giving long and trouble-free service with a minimum of maintenance. The locomotive has been designed to permit the most efficient operation for the various duty cycles encountered in railroad and industrial switching service.

The four main Diesel engines, made by the Caterpillar Tractor Company, Peoria, Ill., are of the four-cycle, eight-cylinder, V-type, with 5¾-in. bore and 8-in. stroke and are directly connected by flexible couplings to the four main generators. These engines are carried on heavy channel sub-bases securely bolted to the underframe top plate. The same sub-bases also carry the main generators. The auxiliary engine, also made by the Caterpillar Tractor Company, has four cylinders, with 4¼-in. bore by 5½-in. stroke. This engine drives the 5-kw. auxiliary generator which charges the battery for the operation of controls and lights. It also furnishes power for the compressor and for the blower for cooling the traction motors. The main and auxiliary engines have Burgess mufflers with the final exhaust carried out through stacks located above the engine hoods. These exhaust stacks also aid in ventilating the engine compartments.

Cooling is by means of radiators in integral assembly with the engine. Each engine has its own radiator and fan to provide cooling air. The cooling systems of the two front engines are connected, as are also the two rear engine cooling systems.

The main driving engines are started by utilizing an auxiliary winding in the main generators, power for which is drawn from the storage battery. The auxiliary engine has an automotive starting system. Conveniently arranged switches at the engineman's position allow individual starting of each engine.

The battery is a heavy-duty 64-volt, 13-plate type, having 215-ampere-hours capacity. Headlights, on both the front and the rear, are so arranged that either can

be dimmed, turned on or turned off. There is a dome light and instrument panel lights in the cab, as well as lights in the engine compartments to permit inspection. A small flashing light gives warning in case trouble develops in the power plant.

Generators, Motors and Blowers

The main generators are shunt wound and so designed as to match the engine characteristics closely. They are designed for railroad service and have capacity enough to transmit full engine output continuously to the traction motors. Generator cooling is by means of a built-in fan. A two-bearing shunt-wound generator, driven by the auxiliary engine, is provided for charging the battery.

The four heavy-duty railway-type traction motors are arranged for one combination of motors, with field shunting arranged for. The motors are cooled by forced ventilation from the constant-speed mechanical blower through a system of ducts, with flexible connections at the motors. Heat-treated forged gears of 16 to 68 ratio connect motors to axles. The gears operate in a bath of oil carried in heavy dust-proof gear cases. Motors have spring-cushioned suspension and are provided with safety lugs.

Features of the Truck Design

The trucks are of the four-wheel motor-driven type. They are built up of rolled-steel slab frames with heavy plate bolsters, motor-suspension lugs, brake-cylinder supports, brake-hanger bosses, spring supports, side bearing supports, and center plates all welded into an integral unit. The pedestal jaws are machined and equipped with renewable spring-steel wearing shoes. Pedestal tie bars have wedge-shape lugs and are attached to pedestal frames with fitted bolts. The truck frames are supported on nested coil springs carried on double forged equalizers which are supported by the journal boxes. Detachable safety chains are applied at each corner of the trucks and fastened to the underframe. The traction motors are suspended between the axle and bolster through spring-cushioned motor nose and lugs welded to the bolster. Truck and underframe side bearings are fitted with renewable hardened wear plates.

The axles are of high-carbon forged steel and heat-treated, conforming to A. A. R. specifications. The diameter at the motor bearing is 8½ in. and at the journals 7 in. The wheels are solid rolled steel, heat treated and with machined treads and flanges conforming to A. A. R. standards. The wheel diameter at the tread is 40 in.

The journal boxes are of cast steel, suitable for 7-in. by 13-in. journals. They are fitted with A. A. R. railway-type crown brasses and end thrust blocks. Approved type dust guards and dust-excluding lids are provided.

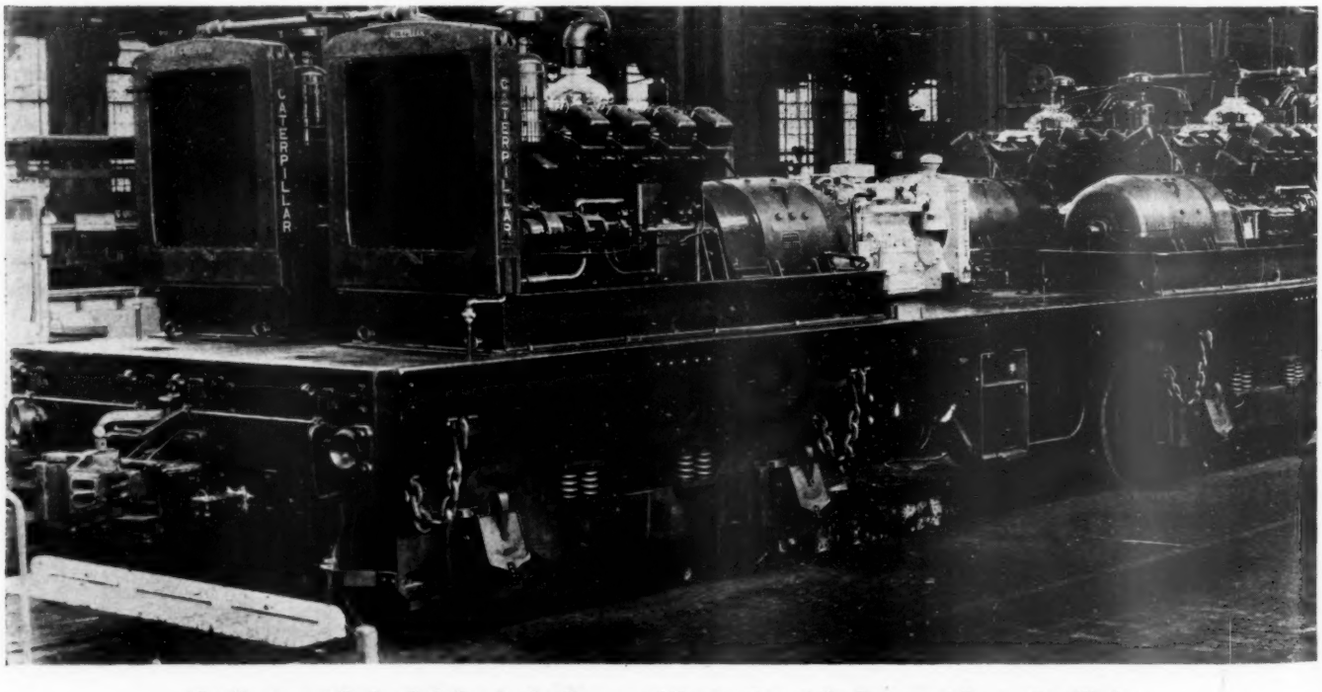
Underframe Construction

The underframe is constructed of heavy structural-steel shapes welded and riveted to a slab steel deck plate with two heavy channels forming the center sills which, with the bolsters and properly spaced cross members, provide a structure capable of withstanding the severe shocks and stresses of heavy switching and railroad service. The bumpers are heavy steel slabs bolted to connecting angles and cast-steel brackets fastened to the underframe. Push-pole pockets are bolted to the bumpers. Body center plates are of cast steel riveted to the center sills and are lubricated.

The couplers are standard A. A. R. Type-E, mounted in cast steel pockets with the supporting shelf bolted to the bumpers. The center line of the coupler is 34½ in. above the rail. Provision can be made for the application of standard friction draft gear. The uncoupling device consists of forged-steel levers arranged to operate from either side of the locomotive in accordance with A. A. R. standards.

The footboards at each end of the locomotive meet the U. S. Safety Appliance requirements. They are equipped with step lights and also have mud-guard plates attached.

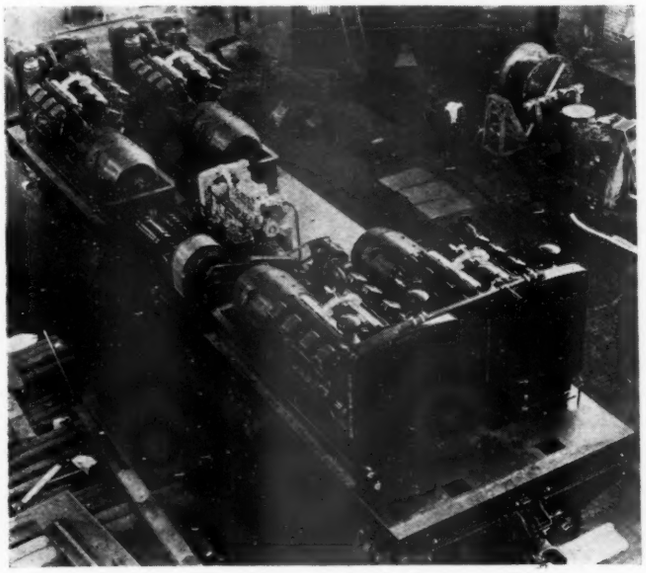
All brake rigging is carried on the truck frame, including the brake cylinders which are mounted on each side of the trucks. Rigging is of the spreader type with turn-



The Davenport-Besler Switcher in the Process of Construction at the Davenport Locomotive Works

buckle adjustments. Brake shoes are standard railway type with steel inserts and removable heads. A hand brake, with hand wheel 22 in. in diameter, located in the cab, is connected to the brake rigging of one truck.

Westinghouse Schedule 14-EL brake equipment is used. Air reservoirs of not less than 40,000 cu. in. capacity are mounted under the main frame between the trucks. The air supply is furnished by an air compressor of not less than 80 cu. ft. per min. capacity, driven by the auxiliary engine. Dirt collectors, safety valves, and cooling pipe are installed as required.



Looking Down on the Main and Auxiliary Caterpillar Diesel-Engine-Generator Sets on the Locomotive Frame Before the Application of the Cab and Engine Hoods

Heavy-duty self-cleaning sander traps and an operating valve are supplied. Four sand boxes, two at each end of the locomotive with a total capacity of approximately 16 cu. ft., are welded into the main frame. Ample size clean-out covers are placed at the bottom of each box. The sand boxes are filled from outside the locomotive. Sander pipes deliver sand to the front of the leading truck in either direction.

General Construction of the Superstructure

The cab, centrally located, is of all steel construction welded and riveted together and securely anchored to the main frame. It is lined with insulation board. There is ample visibility through plate-glass windows having steel sash. Side windows are of the sliding type and have locating latches. Swinging doors, with plate-glass windows, are located at diagonally opposite corners of the cab. The elevated cab floor, of checkered steel plate, is equipped with trap doors to give access to equipment placed underneath. Steel doors are placed at each end of the cab to permit entry into the engine compartments. The cab is fitted with air-cushioned seats, upholstered arm rest, hot-water motor-blown cab heater, air-operated window wipers, and a ceiling light.

The engine hoods, of heavy steel construction, are provided with hinged doors, with suitable latches and locks, permitting access to the engines, generators and accessories for inspection and maintenance. The hoods are thoroughly ventilated through screened and baffled openings. The front of the hoods is removable so that the entire power unit can be easily removed for major repairs. A heavy grill allows entry of cooling air. Each compartment has permanent light fixtures and receptacles for inspection lights.

The fuel tank, of 350 gal. capacity, is constructed of heavy steel plates, arc-welded together. It is mounted crosswise under the main frame. The tank has a Protectoseal filler, flame-arrestor vent, and Protectoseal sump for draining off water and sediment. A float-type sight gage is located near the filler and an electric gage with indicating unit is mounted on the instrument panel in the cab.

Fuel is supplied by a gear pump to each engine with returns for excess fuel. The fuel tank is electrically grounded.

An 11½-in. locomotive bell is operated by an internal quick-acting pneumatic ringer, with an emergency hand cord. There are two pneuphonic horns, one at each end of the locomotive. Suitable brackets are installed for mounting classification or marker lights, with necessary plug sockets.

The main engine throttles are connected together and operated through one control lever which is located to the left and front of the operator. The throttle control lever and electrical controller are so interlocked that the controller can be moved only when the throttle lever is in the idling position. Group control switches are located directly in front of the operator. Engine starting, electrical control connections, auxiliary equipment, and all lights are controlled from these switches. The air brake operating valve is conveniently located at the operator's left.

A sloping instrument panel, properly illuminated, is located in front of the operator. On this panel are mounted the air gages, engine temperature gages, oil pressure gages, traction-motor ammeters, battery ammeter and fuel gage. The sander operating valve, bell-ringer valve, window-wiper valves and whistle control are conveniently located. All control apparatus is located at one station although a second control station can be installed if desired.

General Dimensions and Weights of New D-B Diesel-Electric Switcher

	Ft.	In.
Wheelbase of truck (rigid)	8	0
Wheelbase total	32	0
Length over couplers	42	0
Height above rail with center cab (max.)	14	0
Height top of underframe to rails	4	10
Height cab floor to rails	7	6
Height engine compartment top to rail	11	4
Length of cab—inside	9	6
Width of cab—inside	9	10
Width of engine hood—outside	10	0
Minimum curve	100	0
Maximum speed (m.p.h.)	40	
Total weight in working order (all on drivers)	210,000	
Journal load per driving axle	52,500	
Tractive force at starting, 30 per cent adhesion	63,000 lb.	
Tractive force at starting, 25 per cent adhesion	52,500 lb.	

PLANS FOR A DIRECT RAILWAY AND CAR-FERRY ROUTE between Tokyo, Japan, and Shanghai, China, are being considered by the engineering staff of the Ministry of Railways of Japan. They include the construction of a standard-gage, "straight-line" railroad between Tokyo and Nagasaki, at the western shore of Kyushu Island, and the establishment of a ferry for freight and passenger cars between the latter point and Shanghai. The new line would traverse the Tokyo district in a subway and extend directly west to Shimonoseki, at the tip of the mainland of Japan. Here it would dip under the Strait of Shimonoseki in a tunnel now under construction and pass on through Moji and Hakata to Nagasaki.

Building Above Steam Operation Presents Problems

The Post Office Building, 796 Ft. Long by 344 Ft. Wide, Extends Over 14 Tracks

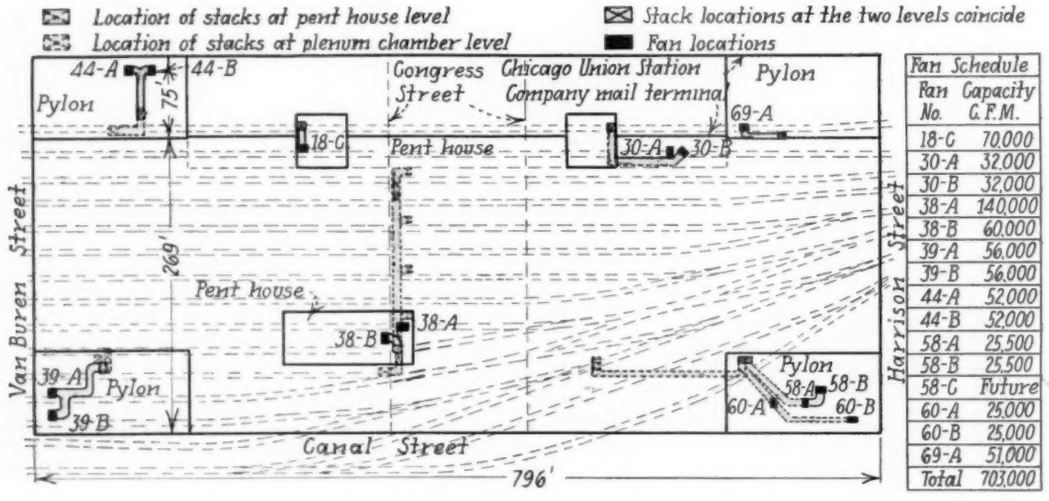
Experience at large post office over tracks at Chicago Union Station shows the destructive effect of smoke and gases on materials and equipment

THAT the removal of large volumes of locomotive smoke and gases from confined areas presents a difficult problem, from the standpoint of both the mechanical exhausting equipment and the effect of the smoke and gases on metals and concrete, has seldom been demonstrated more conclusively than at the United States Post Office building which extends over the tracks at the Union Station in Chicago. Here the smoke and gases from as many as 2,000 train movements a day are collected in a chamber above the tracks and then carried to the roof of the building through exhaust stacks. In this installation, approximately four years of service had brought about the accumulation of approximately 750 tons of cinders and soot sludge; unusually severe corrosion of the reputedly corrosion-resistant metal floor hangers and the exposed parts of the mechanical exhaust equipment; and the deterioration of much of the concrete fireproofing of the structural members.

In 1936, upon the discovery of these conditions, work was started to remedy them. In the work which followed, and which was completed only recently, all of the cinder and soot sludge was removed from the plenum chamber and 6,670 of the rod floor hangers were replaced by specially protected rods of a less expensive character. In addition, a new multiple-pitched, water- and acid-proof floor was provided throughout the smoke chamber over an area of approximately 163,000 sq. ft., and all of the mechanical ventilating equipment was overhauled and increased in efficiency and capacity.

Original Exhaust System Was Inadequate

The post office building, built in 1931 and 1932, is a 12-story structure, 796 ft. long by 344 ft. wide, which lies directly south of the Union Station building, lengthwise over the 14 diverging tracks which enter this station from the south. In the arrangement provided for disposing of the smoke and gases emitted beneath the building, a plenum chamber was constructed continuously beneath the first floor level, with a 4-in. reinforced concrete floor so located as to provide a minimum clearance



Fan Schedule	
Fan No.	Capacity C.F.M.
18-C	70,000
30-A	32,000
30-B	32,000
38-A	140,000
38-B	60,000
39-A	56,000
39-B	56,000
44-A	52,000
44-B	52,000
58-A	25,500
58-B	25,500
58-C	Future
60-A	25,000
60-B	25,000
69-A	51,000
Total	703,000

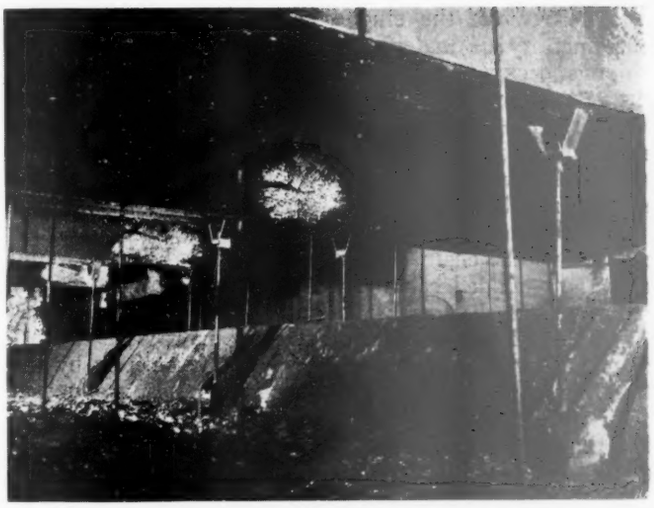
Sketch Plan of the Post Office Building Over the Station Tracks, Showing the Exhaust Stack and Fan Locations

of 17 ft. above the top of rail. This chamber, in which the smoke from engine stacks is collected through longitudinal cast iron troughs directly above the tracks, is exhausted at the roof level of the building through eight exhaust stacks, located marginally along the sides of the building. The chamber has a floor area of approximately five acres, and, owing to the irregularities in the level of the first floor above, and to the structural members which extend into it, has a honeycombed roof of limited height, which has seriously restricted the free movement of the smoke and gases to the exhaust stacks. Of importance also in the matter of the rapid ventilation of the plenum chamber, is the fact that the exhaust stacks were located with greater regard to the saving of valuable floor space within the building than to the particular requirements of a most effective exhaust system.

Another feature of the original construction that proved to be unsatisfactory was that the floor of the plenum chamber was laid practically level, which did not permit ready run-off of condensation collected, even though a number of drainage outlets were provided. Still other features in the design of the exhaust system which proved inadequate were the capacity of the ventilating equipment and the character of the steel used in the rods which support the floor of the plenum chamber. The ventilating equipment was designed apparently to take care of normal average conditions, but failed to take into consideration the rapid reduction in the efficiency of the equipment under the conditions imposed. The greatest care was exercised in the selection of the material to be used in the plenum floor hanger rods, both as regards its corrosion-resisting qualities and high tensile strength, but, under the conditions which prevailed within the chamber, the material selected, with a 14 per cent chromium content and a tensile strength of 98,000 ft. per sq. in., offered little more resistance to corrosion than might be expected of ordinary steel under less severe conditions, and proved to have an ultimate tensile strength, after fabrication, far below that which had been expected.

Condensation Was Troublesome

As a result of the conditions outlined, the smoke removal system has been far from satisfactory in operation. In the first place, the combination of the restricted and broken areas within the plenum chamber and the inadequate capacity of the ventilating equipment did not permit freeing the track area of smoke as quickly and effectively as had been hoped for, especially on days of relatively low atmospheric pressures and high humidity. At the same time, the installation failed to create sufficient velocity of the smoke and gases in the plenum chamber, resulting in excessive condensation both within the chamber and on the under side of the chamber floor.



In Four Years, Approximately 750 Tons of Cinders and Soot Sludge Had Accumulated in the Plenum Chamber

As a result, large quantities of moisture accumulated within the chamber, where it combined with cinders and soot to form a heavy wet sludge, while that which precipitated on the under side of the chamber floor dropped to the track and platform levels to keep them wet almost constantly, presenting a condition which was particularly undesirable during the winter, with the formation of ice which resulted.

The floor of the plenum chamber was supported from the structural members of the floor above by approximately fourteen thousand ¾-in. chromium-steel rods, which were screwed into cast iron inserts imbedded in the concrete of the first floor and into special brackets encased in the concrete of its own floor. Similar rods supported the cast iron smoke troughs above the tracks. These rods, according to laboratory tests before they were installed, showed a high degree of corrosion resistance and a factor of safety relative to the weight carried of approximately 20 to 1.

Investigation Disclosed Serious Conditions

The serious conditions existing as regards the smoke exhaust system were first brought to light during June, 1934, with the initial discovery of severe corrosion of a number of the exhaust fans. Detailed inspection of the conditions within the plenum chamber was at first impossible because of the accumulation of sludge within this area, which ranged from 6 to 16 in. in depth, covering the lower ends of the floor-supporting rods and completely choking the relatively few drainage outlets which had been provided. So far as the plenum chamber itself was concerned, therefore, the first problem

At the Track Level, Looking Through the Large Area Beneath Post Office Building

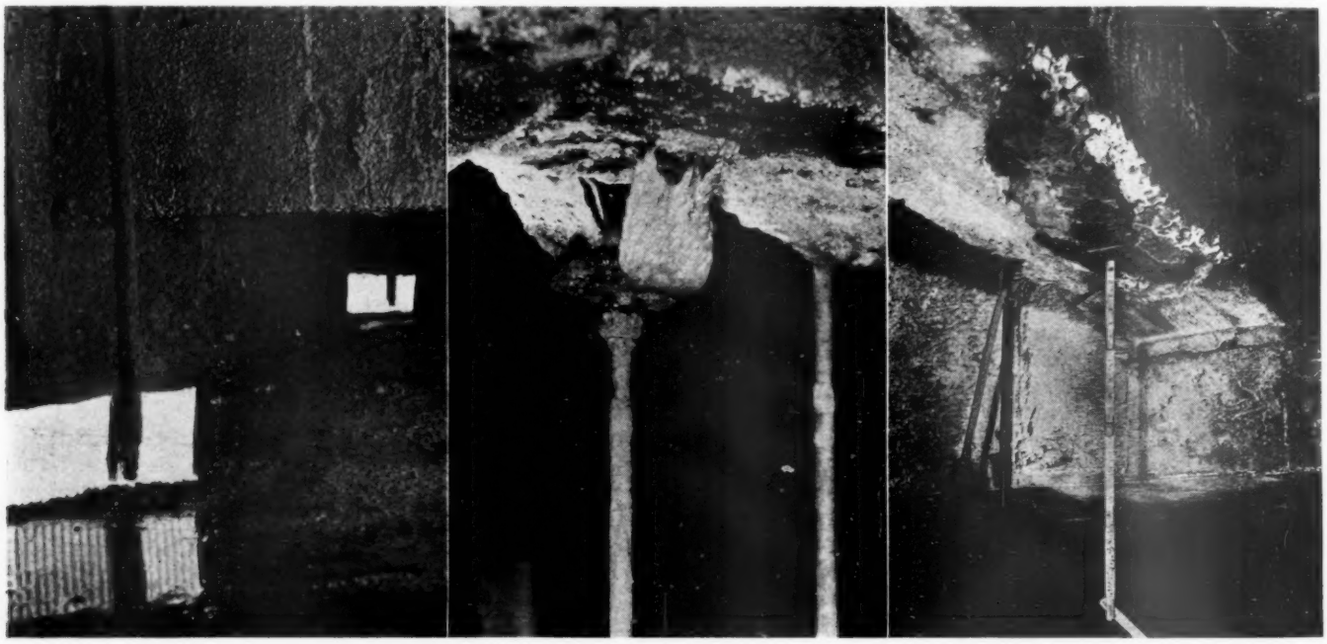
was to remove the sludge accumulation. Because of the quantity of material involved and the almost continuous occupancy of many of the station tracks, this presented considerable difficulty. However, a night crew was organized for carrying out the work, and, between midnight and 8 a. m. over a period of several weeks, the sludge was shoveled through the openings of the smoke troughs directly into gondola-type cars below.

As the sludge was removed and the bottom of the rods supporting the chamber floor were exposed, it was found that the corroded condition of these rods was generally more serious than had been anticipated. In some cases 11 of the 12 rods supporting separate bays were entirely eaten off and the slab was being carried entirely by the 6-in. lip of the cast iron smoke trough. It was found further that many of the rods and rod clamps supporting the smoke troughs had corroded through, and that a considerable part of the concrete fireproofing of the structural floor members within the chamber had been affected seriously due to one cause or another. Still another observation which caused concern was the fact that, in addition to the rods and clamps which had failed entirely because of corrosion, many of the rods and clamps were broken, even where there was sufficient cross section remaining to support the load imposed under normal conditions.

Early during this preliminary inspection it became evident that there was serious danger of large sections of the plenum chamber floor collapsing. Therefore, immediate steps were taken to prevent this. First, an emergency inspection was made of the entire chamber; tracks were taken out of service, even during rush-hour periods, where necessary; and the floor slab and smoke troughs were supported where required by shoring until temporary supporting rods could be installed within the chamber.

While this emergency work was under way, laboratory examinations were made to determine the specific causes of the failures of the chromium-content rods and brackets, particularly those failures which involved the breaking of the rods and brackets where there still appeared to be sufficient cross section to support the loads carried. These examinations showed the grain structure of the metal at the breaks to be highly crystallized, a condition which was determined to be the result of the heating of the rods during their fabrication to meet the peculiar installation requirements. Many of the specimens examined were found to have a tensile strength of only approximately 26,000 lb. per sq. in., as compared with their rated strength of 96,000 lb. per sq. in. at the time of their installation.

As a result of the disclosures in these investigations, it was decided to change out all of the rods and brackets supporting the smoke troughs, and every other slab-supporting rod, regardless of its condition, in addition to all rods that had lost in excess of 25 per cent of their original cross-sectional area. This resulted in the necessity for changing out 6,670 rods, instead of approximately 2,000 as was anticipated originally. As a further result of the investigations, it was decided to use in replacement, ¾-in. rods of S. A. E. x-1335 steel, which has a tensile strength of 80,000 lb. per sq. in., and to protect these rods against corrosion by a special encasement.



Left—Plenum Chamber Floor-Supporting Rods, Corroded Completely Through. Center—Many of the Smoke Trough-Supporting Brackets Were Seriously Affected. Right—Large Areas of the Concrete Fireproofing of the Structural Members Were Bulged or Entirely Broken Away

Several methods of replacing the old rods with the new ones were considered, but the method finally adopted was, first, to cut off the old rod about six inches above the floor slab; then to unscrew the upper section from the insert bracket in the ceiling; and then to drive the lower end down and completely out through the bottom of the floor slab. The new rods, with flat cast-iron plates on their lower ends, were inserted in the holes in the floor slab left by the removal of the old rods, and were screwed into the original inserts in the concrete slab above. Since all of the inserts had right-hand threads, the new cast iron plates at the bottoms of the rods were tapped with left-hand threads so that through turnbuckle action the proper tension could be put in each of the rods as installed.

Before inserting the new rods, the end portions to be encased in the slabs at both top and bottom were given a protective coating of mineral rubber compound, and,

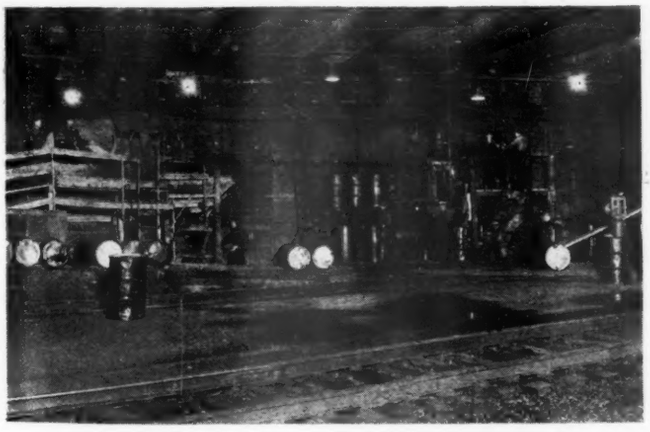
after installation, the holes in the concrete were filled completely with a fine cement grout. In replacing the trough-supporting rods, all of the beam clamps used previously were abandoned because of their crystallized condition, and the new rods were given a threaded connection into holes drilled in the structural floor members above.

Simultaneously with the installation of the new hanger rods, consideration was given to the problem of protecting them against the severe corrosive conditions which had so quickly and seriously affected the original rods. The method finally adopted consisted of encasing the rods throughout their length with a special plastic compound, held in place by means of wood pulp casings, similar to the fibre duct commonly used for underground cable installations, but split longitudinally into two halves for application purposes. The plastic compound employed consisted of 80 per cent Wurtzilite and 20 per cent Tung oil (Chinawood oil).

Since one of the fundamental defects in the original design of the plenum chamber appeared to be the lack of pitch for drainage of the floor, and an insufficient number of drainage outlets, it was decided in the repair work to resurface the entire chamber floor area with a water- and acid-proof material, with a multiple-pitched surface to insure quick and complete drainage of the moisture that would be collected. After much experimentation, in which small sections of the floor area were covered with a wide variety of plastic mixtures, a material of the following mix was decided upon and was used over practically the entire floor area:

1 part Portland cement
3 parts emulsified asphalt
5 parts Waylite (coarse)
3 parts Waylite (fine)
3 parts Vermiculite.

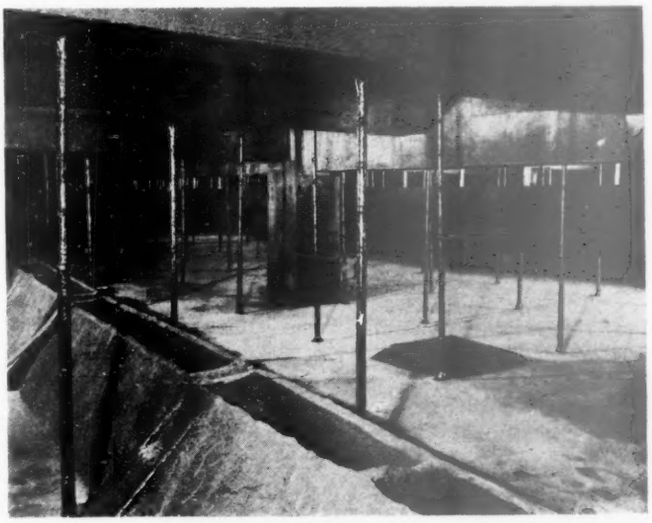
This material, which weighed only 62½ lb. per cu. ft., had sufficient structural strength for foot traffic, and gave indication under test of being both waterproof and resistant to acid attack. All together, 152,970 sq. ft. of new floor surfacing was laid within the chamber, the material being applied to depths of 1 to 9 in. in order to insure adequate drainage slopes.



All of the Mastic for the New Floor Within the Plenum Chamber Was Placed by Air Pressure From a Central Mixing Plant at the Track Level

Determining the most effective and economical manner of applying the floor surfacing material presented almost as much of a problem as the selection of the material itself. Several methods of carrying out the work were considered and tried out, but the method adopted as the most practical and economical involved the use of a cement gun. Even this method, to be entirely satisfactory, required some adjustment from ordinary practice because of the tacky character of the material to be handled.

The final arrangement of the placing equipment provided for the location of the aggregate mixing plant and the cement gun, together with the liquid asphalt supply, in an area along one side of the track layout, and then forcing by air pressure the mixed dry aggregate and the asphalt through separate hose lines to the working area within the plenum chamber. Here, these materials were mixed within the cement gun nozzle as they were applied to the floor. In spite of the fact that the materials were conveyed distances up to 700 ft. by this method, no difficulties were encountered, and it was possible to place an average of approximately 85 cu. yd. of the flooring material each eight hours of working time.



A Section of the Plenum Chamber After the Work of Cleaning, Paving the Floor and Renewing Rods Had Been Completed

Much Concrete Work Repaired

Another important phase of the work required within the plenum chamber was to repair the concrete fireproofing which encased the structural members of the first floor of the building. This fireproofing was supposedly two inches thick and its original design called for adequate wire mesh reinforcing to insure its adherence to the steelwork.

Inspection of the fireproofing showed a large percentage of it to be in a condition that was far from satisfactory. At many of the beams and girders the fireproofing actually sagged from the steel, while at hundreds of places, a hollow sound upon tapping indicated that there were air pockets between the concrete and the steelwork. At numerous places also, sections of the fireproofing had fallen entirely away from the steelwork, exposing the structural members. One of the rather surprising aspects of condition of the fireproofing was that, except in those areas directly above the smoke troughs, the concrete appeared to be little affected by the abrasive action of locomotive blasts or by the acid conditions which existed within the chamber.

In view of the extent of the bulging fireproofing, it was considered advisable to repair only the worst conditions, leaving the remainder to be repaired as the situation may warrant in the future. In the work carried

out, several methods were employed, depending upon the conditions found. On many of the beams where, because of the amount of the concrete involved, the sagging fireproofing appeared to be dangerous, it was drawn back tightly against the steelwork by means of tap bolts equipped with large cast iron button-type heads, which were turned up into holes drilled and threaded in the flanges of the members. At other points, where the fireproofing had fallen away completely, repairs were made by the Gunite method.

Over those areas of the fireproofing directly above and adjoining the smoke troughs, where, in some locations the concrete had been worn away by erosion as much as one-quarter inch, repairs were made by the Guntex method. This involved first, the application of an emulsified asphalt prime coat by means of an air gun, and then the application of a finish coat consisting of 80 per cent silica sand and 20 per cent emulsified asphalt, also by the air gun method.

In the work on the concrete fireproofing, 19 acres of concrete ceiling, wall and beam surfaces were washed and cleaned; approximately 1,500 patches were applied by the Gunite method; the reinforcing beneath the bottoms of 17 beams or girders was entirely replaced; and approximately 111,900 sq. ft. of the fireproofing and ceiling areas was Guntexed with asphalt compound.

Additional Drains Provided

Other important items of work carried out within the plenum chamber included the repair of the existing 27 floor drains and the installation of 157 new floor drains; the installation of 192 additional manhole openings in the plenum chamber floor; and the installation of a supplementary chamber exhaust system near the center of the building to overcome a particularly severe condition of stagnation at this point. In addition to these changes and improvements, a system of high-pressure hot-water hose cleaning was installed within the chamber, whereby its entire interior can be flushed out periodically through the floor drains.

The installation of the many additional drains in the plenum chamber floor raised the problem of protecting them against freezing during severe winter weather, to prevent the accumulation of soot sludge within the chamber and possible damage to the drainage system. In solving this problem, gas-burning jets were installed at the lower ends of 72 drains where it was known that the condensation run-off would be the most continuous and severe. In addition also, especially in those areas subject to particularly drafty conditions, the drain pipes were wrapped with wool felt jackets, whereby it is expected that considerable saving will be effected in the operation of the gas burners, restricting their use to periods of only the most severe weather.

Ventilating Capacity Increased

Along with the extensive work required within the plenum chamber itself, was the problem of repairing and increasing the capacity of the ventilating equipment carrying the smoke and gases away from the chamber to the atmosphere at the roof level. The mechanical ventilating equipment provided originally included 15 rotary-type fan units with theoretical exhausting capacities ranging from 22,500 cu. ft. per min. to 84,000 cu. ft. per min., and with a combined capacity of 562,000 cu. ft. per min. It was obvious, however, that as a result of service, this equipment was not operating to anywhere near its rated capacity, and had suffered severe deterioration from corrosion.

To check the efficiency of the equipment, and, as a basis for improving the ventilating system as a whole, hundreds of air movement readings with anenometers were taken throughout the track level area beneath the building. In this work, 183 reading points were established, and the tests involved extended over a period of several weeks. During this period, all dead air areas were plotted, which provided a basis upon which to work out improvements in the exhaust system. It was largely as a result of this extensive study of draft conditions about the track area that two supplemental exhaust arrangements were provided, one near the center of the building, as already mentioned, and a second near one corner of the building, where use could be made of facilities provided in the original design of the building for exhausting the motor vehicle gases at a large tailboard area.

In addition to these supplemental installations, all of the existing ventilating equipment was completely overhauled and repaired, which increased its efficiency in some cases as much as 100 per cent. At the same time, the ventilating efficiency at several points was increased by the substitution of larger units, with the result that in the improved ventilating system as a whole, there are now a total of 18 exhaust fans, with a total theoretical capacity of 737,000 cu. ft. per min., as compared with an estimated working capacity of the original units in their deteriorated condition of only approximately 300,000 cu. ft. per min.

Along with the enlarging of the capacity of the ventilating system, all of the rotors of the fan units were repaired and were given a shop coating of metallic lead. At the same time, all new metal ducts within the system were lead-lined, as were also replacement sheets in the hoods over the exhaust shafts at the roof level.

Work Handled by Union Station Company

The extensive work described was carried out over a period of approximately two years, and, as might be expected under the conditions outlined, involved phases of work which were both difficult and hazardous. Especially during the early inspection and repair work, it was essential that every man be equipped with a gas mask. Later, a system of bulkheading was devised whereby working areas were cut off from the remainder of the plenum chamber and forced ventilation provided which permitted working without masks. Fresh air ventilation for the working areas was provided by three electric-driven blowers, each with a capacity of 3,000 cu. ft. per min., which were mounted on trucks at the platform level and connected to the bulkheaded areas with Ventube flexible ducts.

All of the work involved in repairing and enlarging the capacity of the smoke exhaust system was carried out at the expense of the federal government under its agreement with the Union Station company for the provision and maintenance of an adequate smoke exhaust system above the station tracks, and was done under the general supervision of William A. Richardson, senior maintenance engineer of the United States Treasury department. The actual work, however, was done under contract by the Chicago Union Station Company, which acted as both engineering consultant and general contractor. The plans and specifications for the work were prepared under the direction of O. H. Frick, general manager and chief engineer of the Chicago Union Station Company, and C. E. Cox, assistant chief engineer, while the actual work operations were carried out under the immediate supervision of William Landess, construction superintendent.

What Railway Labor Leaders Think of Each Other

Some letters written recently by A. F. Whitney, J. A. Phillips and others in which they say "Coward," "Skunk," "Sewer Rat," "Contemptible, Nasty, Deliberate Falsehoods," "Brazen Effrontery of an Abandoned Woman," "Loud-Mouthed Slanders," "Intellectual Inkfish" and so on ad infinitum

DURING the recent wage negotiations between the Carriers' Conference Committee and the railway union leaders there was hardly a day in which some of the labor leaders did not denounce the *Railway Age* for carrying on "misleading and dishonest propaganda" in behalf of a reduction of wages. The readers of this paper may be edified by information furnished by themselves regarding what some of these labor leaders think of each other, and may even believe that if all they say about each is true it is a compliment to the *Railway Age* to be denounced so often by them.

For some years A. F. Whitney, president of the Brotherhood of Railroad Trainmen, and George M. Harrison, president of the Railway Clerks union, who replaced Whitney as Chairman of the Railway Labor Executives' Association, have been exchanging abuse of each other, some of which has been quoted in these columns. Recently there has been bitter warfare between the heads of the "Big Five" transportation brotherhoods. These brotherhoods consist of the employees in engine and train service who have been called the "aristocrats of American labor"; but it is now disclosed that their heads have been putting in writing to each other much language that does not sound very aristocratic.

The correspondence happens to be available because it has been published by the Brotherhood of Railroad Trainmen in a pamphlet for distribution among its members. It was started because of an article by James McMullin that appeared in the Philadelphia Public Ledger. His article and the resulting correspondence are quoted below from the pamphlet above mentioned.

At Stevens Hotel, Chicago, Ill.
August 3, 1938.

The following is presented for the information of our members:

NEW YORK COMMENT

By James McMullin

New York, July 25.

Compromise

Current railway wage parleys will bog down in futility.

The rail unions are still sparring for time, hoping that traffic recovery will spare them the necessity for making concessions. But, despite their outward show of firm resistance, the backstage atmosphere is more auspicious for a wage adjustment than is generally suspected.

With the exception of a few die-hards—notably A. F. Whitney, of the Brotherhood of Railway Trainmen—officials of the "big five" operating brotherhoods privately recognize that the carriers' plight is desperate. While they are unwilling to swallow a wage "reduction," they might be persuaded to accept a "suspension" of last year's wage increase until traffic regains a certain specified level. The difference in wording would save their faces—an important consideration, from their viewpoint.

This compromise is in the cards provided (a) that traffic does not improve markedly in the next month or two, and (b) that Whitney can be induced to modify his bitter-end opposition. Large traffic gains are most unlikely, but Whitney may be a tough nut to crack.

Momentous

The solution outlined above would represent a definite step in the direction of wage flexibility—automatic adjustment of wages up or down to conform to changing business conditions. This principle has already been adopted in the copper industry and is being seriously discussed behind the scene in the steel industry.

The steel and railroad labor situations parallel each other closely in several respects. In both cases managements are trying hard to cut labor costs and unions are going through the motions of a stiff battle backed by the Government to hold their gains of last year. Both steel and rail union officials are more "reasonable" in private than in public, and concede that adjustments will probably have to be made unless there is a sharp improvement in business. And in both industries backstage negotiations are moving toward acceptance of a flexible wage formula.

Insiders see this as potentially one of the most momentous developments in American labor history. Agreement by managements and unions on a definite basis that wages shall go up when business volume rises and vice versa would eliminate the greatest single cause of industrial friction. This, in turn, would benefit our whole economy by minimizing losses from strikes. If steel and the railroads set the pace, it's a safe bet that many other industries will quickly fall in line.

Brotherhood of Railroad Trainmen
Cleveland, Ohio

At Stevens Hotel, Chicago, Ill.
July 27, 1938.

Mr. A. Johnston,
Grand Chief Engineer,
Brotherhood of Locomotive Engineers.

Mr. D. B. Robertson,
President, Brotherhood of Locomotive Firemen and Enginemen.

Mr. J. A. Phillips,
President, Order of Railway Conductors.

Mr. T. C. Cashen,
President, Switchmen's Union of North America.

Dear Sirs and Brothers:

I quote the following from a syndicated newspaper article, New York Comment, by James McMullin, dated New York, July 25, 1938:

"Current railway wage parleys will bog down in futility. The rail unions are still sparring for time, hoping that traffic recovery will spare them the necessity for making concessions. But despite their outward show of firm resistance, the back-stage atmosphere is more auspicious for a wage adjustment than is generally suspected.

"With the exception of a few die-hards—notably A. F. Whitney, of the Brotherhood of Railway Trainmen—officials of the 'big five' operating brotherhoods privately recognize that the carriers' plight is desperate. While they are unwilling to swallow a wage 'reduction,' they might be persuaded to accept a 'suspension' of last year's wage increase until traffic regains a certain specified level. The difference in wording would save their faces—an important consideration, from their viewpoint."

Under the heading, "Momentous," the article continues the discussion of wages and asserts that the above would represent "a definite step in the direction of wage flexibility—automatic

adjustment of wages up or down to conform to changing business conditions."

To say the very least, such a wage doctrine is damnable; it is a hangover from the days of feudalism and human slavery. The doctrine that wages should fluctuate with changing business conditions glorifies the sweatshop. If current ability to pay were made the basis for wages, it would be necessary to rearrange the entire railway wage system, we never could hope for stability and, so far as protection of wages is concerned, there would no longer be a necessity for labor unions. Under the ability to pay theory, the employes of the Rutland Railroad would be required to pay for the privilege of working for that railroad and on some of our prosperous railroads the employes would receive a wage several times larger than their present one.

Freight and passenger rates apply to rich and poor alike. It is a fundamental theory of capitalistic economy that all buyers pay the standard rate or price. To contend that a railroad which has been plundered into bankruptcy by financial mismanagement and gambling, should be permitted to obtain its labor at a cheaper rate, is no different in principle than to contend that the railway employe who goes from the "pay car" to a poker game and loses his money, should be allowed to buy his groceries at a discount.

Mr. McMullin's statements, above quoted, are contrary to the positions expressed by each of you prior to these wage conferences and I believe you are being misrepresented. If so, you may desire to inform the public that you have been misrepresented. We have met the Carriers' Joint Conference Committee as many times as you have, and nothing they have said has had any magnetic qualities which would persuade us to believe that their wage-cut demands, or demands or suggestions for any "compromises," or "suspensions," involving any reductions in the wages of the men we represent, are just or can be yielded to by us. Many courts, public boards and fact-finding commissions have decreed that workers are entitled to decent living wages, without regard to ability to pay and whether or not security holders are paid anything. I consider this a just philosophy and it is one which the Brotherhood of Railroad Trainmen is prepared to defend unto the last.

Fraternally yours,

A. F. WHITNEY,
President.

GRAND OFFICE
BROTHERHOOD LOCOMOTIVE ENGINEERS
Cleveland, O.

July 30th, 1938.

A. F. Whitney, President
B. R. T.
Cleveland, Ohio

Dear Sir and Brother—

I have your letter of July 27th addressed to Presidents Robertson, Phillips, Cashen and the undersigned with reference to a syndicated newspaper article "New York Comment" by James McMullin, dated New York, July 25th, 1938.

I have read this article and your comments on it with interest.

Please be advised there has been no statement that I have heard on the part of any of the Chief Executives connected with the wage movement, which would indicate other than that they will resist any reduction in wages to the bitter end.

You may rest assured there is no foundation for this statement, insofar as the Brotherhood of Locomotive Engineers is concerned. I am opposed to this wage reduction and trust all the other organizations interested will continue to resist the Managements' desire to cut wages, so we will not have a recurrence of what happened during our wage movement last fall.

With best wishes, I am,

Fraternally yours,

A. JOHNSTON,
G. C. E.

cc D. B. Robertson
J. A. Phillips
T. C. Cashen

BROTHERHOOD OF LOCOMOTIVE
FIREMEN AND ENGINEMEN
Cleveland, Ohio
Morrison Hotel, Chicago, Ill.

July 29, 1938.

Mr. A. F. Whitney,
President, Brotherhood of
Railroad Trainmen,
Stevens Hotel, Chicago, Ill.

Dear Sir and Brother:

This will acknowledge receipt of your letter of July 27, addressed to Brothers Johnston, Phillips, Cashen and the undersigned, quoting from James McMullin's syndicated newspaper article dated New York, July 25, 1938.

I had already noted Mr. McMullin's article, but concluded that it was part of the railroads' inspired propaganda and that it could be most effectively discredited by letting time and the facts do the job.

I think our committee is doing a very good job of showing the cause of the carriers' so-called "plight" and in making clear the reasons why there should be no change in the present wage rates. In so far as the Brotherhood of Locomotive Firemen and Enginemen is concerned there will be no change. I hope the same may be said of the Brotherhood of Railroad Trainmen.

Yours fraternally,

D. B. ROBERTSON.

cc: A. Johnston
J. A. Phillips
T. C. Cashen

SWITCHMEN'S UNION OF NORTH AMERICA
Buffalo, N. Y.
July 30, 1938

Mr. A. F. Whitney,
President, Brotherhood of Railroad Trainmen,
Stevens Hotel, Chicago, Illinois

Dear Sir and Brother:

I have your letter of July 27 quoting from James McMullin's syndicated article, dated New York, July 25, 1938.

As I never heard of McMullin I contacted our Buffalo papers and they advise that they do not know him and have no record of him as a columnist or writer.

Your quotation of his article smells like some recent statements that appeared in *The Railway Age*.

I mention this as I do not believe it advisable to assist McMullin, or any other writer, in peddling railroad propaganda at this time.

On the other hand, it is possible McMullin may be one of those half-baked Communist-Red writers who are breaking into print because the first intimation I had in connection with the possibility of any compromise on the wage question came from W. Z. Foster and has been repeated in The Daily Worker, the object, of course, being to create dissension and thereby divide the organizations opposing the wage reduction.

Therefore, I question the advisability of attempting to inform the Public on a matter that does not exist.

May I suggest that you do not waste your valuable time and energy in an effort to bolster the morale of our camp as we know as many reasons as you do for opposing a wage reduction.

Speaking for switchmen—members of the Switchmen's Union of North America—please be advised that there never has been, and there is not now, any thought or intention of compromise in this wage reduction move because members of our Union have never received the compensation to which they were entitled and which, as you know, has been largely due to their improper organization. There are times when I believe that had the switchmen of this country been properly organized the Carriers would not have had the nerve to ask them to accept a reduction in wages.

I am pleased to note the firm position you indicate your organization is taking in connection with this matter and I sincerely hope that this position will not change and that you, as chief executive of your organization, will carry out the statement contained in the last line of your letter reading in part as follows—"defend unto the last."

Fraternally yours,
SWITCHMEN'S UNION OF NORTH AMERICA
T. C. CASHEN,
International President

cc to A. Johnston,
G.C.E., B. of L. E.
D. B. Robertson,
Pres., B. of L. F. & E.
J. A. Phillips,
Pres., O. R. C.

ORDER OF RAILWAY CONDUCTORS
Wage Committee Headquarters
Chicago, Illinois
August 1, 1938

Mr. A. F. Whitney
President B. of R.T.
Stevens Hotel, Chicago, Ill.

Dear Sir and Brother:

Your letter of July 27th addressed to Johnston, Robertson, Cashen and myself, at hand, wherein you quote an uninformed newspaper columnist who rates you as a die-hard labor leader and the others of the "Big Five" as willing to compromise.

Ordinarily, such newspaper comment is disregarded but after

you wrote us you then broadcast copies of your letter to the press and the Chicago newspapers added their comment. This clumsy effort on your part to elevate yourself by tearing down others, is somewhat amusing to those of us who know your record for quitting when the going gets tough.

It is well known that you are the only one of the "Big Five" that does not enjoy the confidence of the rank and file. The men at home know that you resigned from the Railway Labor Executives' Association, because you dare not face the charges of malicious lying placed against you by Chairman Harrison and myself, and *not* because you objected to the policy of the Association on retirement legislation, as you claimed.

When the railroads launched their wage-cut program, you found yourself in a desperate situation. You were all alone, on the outside, where through your lack of courage to face the true charges, you had placed yourself. You sent word to the Association that you would be willing to join forces during the wage negotiations and pay your share of the expenses for attorney fees, statisticians, printing, etc., but your offer was unanimously rejected. This action by the Association was a true measure of your unpopularity with the men who have had opportunity to observe you, at close range. They preferred to be completely freed of your company and your despicable tactics in the instant case is all that is needed to justify their judgment.

To cite only a few instances of your inherent weakness:

You cannot deny that in 1927 when the O. R. C. and B. R. T. had secured a 7½% increase in the east and the south, you betrayed the men in the west by quitting the agreed upon program and entering into an agreement with the railroads to arbitrate the issues involved, instead of moving for a vote of our members, as the O. R. C. wanted to do. As a result of your perfidity, the road conductors and trainmen lost the increase entirely, although the yard men received the 7½%. A year later the road men secured a 6½% increase but they have worked for the past ten years for 1% less than conductors and trainmen in the east and south. The actual loss to men in the West on account of your treachery in that one case, amounts to millions of dollars. The loss for the one year period amounted to about three million, five hundred thousand dollars, and the loss for the past ten years on the basis of 1% is certainly no less than five hundred thousand dollars per year. A grand total approximating eight and one-half million dollars. Do you really think that you can make these men believe that you are prepared to "defend unto the last" their present wages.

In 1937, you again stultified yourself by solemnly agreeing to abandon your program for a flat increase in pay and join with the Engineers and Conductors in a program for a percentage increase. But, when the going became tough you deserted the Engineers and the Conductors and induced your general chairmen to accept an increase of approximately 6 per cent when everyone knew that we could have secured a 10% increase by carrying through the agreed upon program of fixing a date for withdrawal from service thereby securing an Emergency Board. To the credit of your general chairmen, it is gratifying to say that a majority wanted to stand with the Engineers and Conductors, but you used your influence and after several hours brought them into accord with your nefarious program.

I shall refrain from giving copies of this letter to the press until such time as you again break into print in a manner reflecting upon myself or my associates, but if I am forced to give the press your record I will include your recent exhibition of cowardice when, on March 2, 1938, in your Cleveland office, you threatened your General Secretary George W. Anderson, with a pistol, but failing to intimidate Anderson by such bluffing he proceeded to give you a severe beating, knocking you down several times. Finding yourself and your gun no match for an unarmed man, and realizing that you were in for a real old-fashioned trimming, you "yelled" for your clerk to call the police, which was done. As the story goes, Anderson informed you that he intended "to whip you every morning before breakfast" if you ever interfered with his Department again.

This is just one more concrete illustration of how thoroughly yellow you are. I can cite other instances if necessary.

The 18 organizations are standing firm against a wage cut. It is unfortunate that you are unworthy to sit with them.

Fraternally yours,

J. A. PHILLIPS,
President, O. R. C.

P. S.

Since writing the above, I have received a telegram from Stockton, California, quoting you as sending a telegram to D. A. MacKenzie, as follows:

"NEWSPAPER REPORTS INDICATE PHILLIPS AND CASHEN WEAKENING AND THAT THEY HAVE INTIMATED BEHIND CLOSED DOORS OR THROUGH SEWER ROUTE THAT THEY ARE PREPARED TO SURRENDER INCREASES RECEIVED FOR CONDUCTORS TRAINMEN AND YARD MEN IN NINETEEN THIRTY-SEVEN EVERY CONDUCTOR, TRAINMAN AND YARD MAN ON WESTERN PACIFIC RAILROAD SHOULD BE ADVISED OF THIS SPINELESS ACTION"

to which I replied as follows:

"RE TEL INDICATION WHITNEY RESPONSIBLE FOR UNTRUE NEWS ARTICLE OSTENSIBLY BROADCAST BY HIM FOR THE PURPOSE OF TRYING TO IMPROVE HIS POOR STANDING WITH RANK AND FILE. THERE IS ABSOLUTELY NO FOUNDATION FOR SUCH STATEMENTS AS THE EIGHTEEN ORGANIZATIONS ARE STANDING AS A UNIT IN OPPOSITION TO A WAGE CUT. IT IS SIMPLY ANOTHER WHITNEY LIE. THE MEN IN THE WEST WILL NOT FORGET THAT WHITNEY BETRAYED THEM IN NINETEEN TWENTY-SEVEN BY DESERTING THE AGREED TO PROGRAM TO VOTE THE MEN AND AGREED WITH THE RAILROADS TO ARBITRATE, THEREBY FORCING THE CONDUCTORS TO DO LIKEWISE. THE RAILROADS WON THE AWARD AND THE MEN LOST THE INCREASE OF SEVEN AND ONE HALF PER CENT WHICH HAD ALREADY BEEN SECURED IN THE EAST AND SOUTH. THE CONDUCTORS AND TRAINMEN IN THE WEST LOST APPROXIMATELY THREE MILLION FIVE HUNDRED THOUSAND DOLLARS DURING THE FIRST YEAR FOLLOWING WHICH THEY SECURED AN INCREASE OF SIX AND ONE HALF PER CENT, AND FOR THE PAST TEN YEARS HAVE SUFFERED A LOSS OF ONE PER CENT AMOUNTING TO ABOUT FIVE HUNDRED THOUSAND DOLLARS PER YEAR MAKING A TOTAL LOSS OF SOMETHING LIKE EIGHT AND ONE HALF MILLION DOLLARS. THE MEN HAVE NOT FORGOTTEN WHITNEY'S TREACHERY LAST YEAR IN DESERTING THE ENGINEERS AND CONDUCTORS AND SETTLING FOR SIX PER CENT WHEN THEY COULD HAVE EASILY SECURED TEN PER CENT BY GOING TO AN EMERGENCY BOARD. I AM CONVINCED THAT THE MEN ON THE WESTERN PACIFIC WILL NOT BE DECEIVED BY WHITNEY PROPAGANDA. THEY KNOW THE FACTS WHICH SUPPLY THE ANSWER TO SUCH PROPAGANDA. WHITNEY CITES RUMORS WHICH HE DOUBTLESS STARTED HIMSELF. I AM CITING THE RECORD WHICH HE MADE. CHOICE SHOULD BE EASY"

BROTHERHOOD OF RAILROAD TRAINMEN
General Offices, Cleveland, Ohio
At Stevens Hotel, Chicago, Ill.
August 3, 1938.

Mr. J. A. Phillips, President,
Order of Railway Conductors,
Great Northern Hotel,
Chicago, Ill.

Dear Jim:

Your libelous and untruthful letter of the first in reply to a letter by President Whitney to you of July 27th, has been called to our attention.

To call you a skunk would be gross flattery.

President Whitney sent a letter to you as well as to Mr. A. Johnston, Mr. D. B. Robertson and Mr. T. C. Cashen, in a spirit of co-operation, and in a desire to assist not only the Brotherhood of Railroad Trainmen but members of all railroad Brotherhoods in opposing the present attempt to bring about a wage cut.

We are pleased to inform you that the replies received from the three gentlemen above mentioned indicated their appreciation of the spirit in which President Whitney was acting.

Your reply clearly indicates that for personal reasons, and through ill-will, you have been willing to resort to the most contemptible falsehoods in replying to President Whitney's letter.

A sewer rat when cornered loses his temper, and during his frenzy does many things which remind us of you.

We desire to state that President Whitney does enjoy the confidence of the rank and file of his membership, and your effort to create the impression that the General Chairmen's Committee, as well as the rank and file of the Brotherhood, are not back of him is just as silly as the statement you made in 1935 when you broadcast that he would be defeated for re-election as President. You guessed wrong then and you are guessing wrong now, "Jimmy."

At that time you also predicted that if President Whitney were re-elected, the Brotherhood would lose ten thousand members, but within a year after President Whitney's election the increase in the membership of the Brotherhood was almost as great as the entire membership of your organization, and no one is more aware of that fact than you are Jimmy. This is probably one of the reasons why you are so ready and willing to resort to abuse and vilification instead of doing what you should to help the membership of your organization in this vital fight to protect their interests.

Your statement that President Whitney withdrew from the Railway Labor Executives' Association because he did not dare face certain charges placed against him by Mr. Harrison and yourself, is only one more proof of the fact that you are a monumental liar.

You, of course, are fully aware of the fact that President Whitney has no more respect for you than he would have for any other liar.

As President of the Brotherhood of Railroad Trainmen he

was not permitted to sit in on the conference held with the Pelley Committee in connection with the Railroad Retirement Act.

Had he not resented the contemptible conduct of the insiders in this deal he would not have been worthy to serve his organization longer as Chief Executive. The membership of his organization, as well as the Committee of General Chairmen, fully approve his conduct in connection with the Railroad Retirement Act.

It is silly for you to say that when this move was launched for a 15% wage cut that President Whitney was alone on the outside, or that he wanted to join forces during these negotiations with you.

Again you are a monumental liar when you make such an assertion. President Whitney has not indicated to anyone within the Railway Executives' Association, or on the outside, his position in this connection, but he has said, and we here repeat it to you, that it was his view that the different groups handling the wage matter should not permit personal differences to enter into this controversy and thereby injure the membership or jeopardize the rights of any member of these organizations.

We are whole-heartedly back of him in this position, and regret extremely that your personal animus toward President Whitney should cause you to stoop to the contemptible, nasty, deliberate falsehoods that you have in your letter to him.

Every member of every railroad Brotherhood should co-operate in opposing the effort to break down the wage structure as affecting railroad employes, and the people who are trying to force reductions in pay are our common enemies, and to this extent he has stated to us, and we state to you, that he, as well as the Brotherhood of Railroad Trainmen, are prepared to do everything humanly possible to block a wage cut for members of the Brotherhood and members of other railway labor organizations—and we will use our influence and economic strength to help any group regardless of their unfortunate and helpless leadership.

It is, of course, regrettable that as President of the O. R. C. your associates seem to have so little confidence in you that during the conferences that are now in progress with the Enochs Committee, you have been heard only on a few occasions with inconsequential utterances, and were it not for Chairman Harrison the Order of Railway Conductors would be without representation in these conferences.

It must be a sorry picture indeed, Jimmy, for your members all over the country to realize that either because you lack the nerve, or because you have not the mental capacity, or because of a serious doubt as to your sincerity in this fight, that they have to rely upon other leaders instead of the man who draws his salary from the Conductors but does not earn it.

You undertake to befog the issue by going into ancient history and bringing into the picture the wage movement of 1926 in the East, of 1927 in the South and West, and allege betrayal on the part of President Whitney in the Western Wage Movement of 1927, asserting that he entered into a program with the railroads to arbitrate the dispute. Your utterances are unworthy of the consideration of honest union men.

In 1926 W. G. Lee was President of the Brotherhood of Railroad Trainmen and handled the wage movement jointly with the conductors' organization in the Eastern Territory, which resulted in an increase of 7½% in compensation to train and yardmen, effective December 1, 1926.

In February, 1927, W. G. Lee was still President of the Brotherhood, and a settlement was made by joint action of the O. R. C. and the B. of R. T. in the Southern Territory for trainmen and yardmen, increasing basic rates 7½% effective February 1st of that year.

In March, 1927, the Western wage movement was commenced, during which time Mr. Lee was President of the Brotherhood, and it was handled by Mr. W. N. Doak, and President Whitney, who was then Vice-President of the Brotherhood, had nothing to do with the handling of the movement, and his only activity was to testify before the Board of Arbitration.

The several B. of R. T. General Chairmen and Vice-President Whitney were opposed to submitting this case to arbitration, but the record shows that members of the O. R. C. insisted upon this action. The record also shows that the decision of the Board which denied your conductors and our trainmen an increase in wages, granted a 7½% increase to the yardmen. We knew then, and you know now, that had conductors and trainmen been wholly represented by the Brotherhood of Railroad Trainmen, as the yardmen were, they would have received a 7½% increase, the same as given to the yardmen.

During all of this time Mr. W. G. Lee was President of the B. of R. T., and your charge that President Whitney was responsible for bringing about the arbitration falls under its own weight, and is only another example of your willingness to resort to deliberate falsehoods for personal reasons.

You, of all men, should know that Brother Whitney took office as President of the Brotherhood on July 1, 1928, and one of his first duties was to take up the belated wage matter in the Western Territory jointly with one of your predecessors in whose shoes you are now rattling around. This movement was handled co-operatively and with a great degree of harmony between the O. R. C. and the B. of R. T., and being unable to secure a settlement, the President appointed a Board, who on November 23, 1928, handed down a recommendation that the basic rates for conductors and trainmen be increased 6½%, retroactive to May 1, 1928.

The increase granted 1% less than was granted a year and a half before to men in the Eastern and Southern territories, and according to the decision of the Board its action in failing to recognize the standard rate for these classes was due largely to the high mileage run by them.

We agree with you that there was a loss in wages to conductors and trainmen in the Western Territory that has been quite pronounced, and the pitiful fact is that you, since you became president of the O. R. C., have done nothing to eliminate the differential existing between the conductors in the eastern and southern sections as against the west. We presume this is only another way in which you earn your salary.

Your sordid reference to the 1937 wage movement is unworthy of consideration. If you could stumble into the truth, you would tell your membership, as well as all others, that considering all the circumstances, the organization secured the maximum in increases.

In your insane hatred towards President Whitney, and in making these charges, you forget that if they are true that they apply equally to D. B. Robertson and T. C. Cashen, and we dare you to make such a charge against either one of those men, notwithstanding the fact that at the time of the 1937 wage movement you did make a number of very uncomplimentary remarks about both of them.

The Brotherhood of Railroad Trainmen has never deserted the engineers, conductors or any other group of railway workers, and never will. The Brotherhood, however, will maintain its autonomous rights even though it may from time to time be pestered by the slanderous tongue of Jim Phillips, and even though it may have to be embarrassed by the present head of the O. R. C. whose conduct, inability, prejudice and ignorance is doing everything that can be done to lessen the membership of the organization of which you are the head.

With the brazen effrontery of an abandoned woman you make the silly statement that if the 1937 wage case had gone to the Emergency Board, a 10% increase would have been granted. We know that this is not true, and the members of your organization know this is not true, and when you are willing to make such a statement it is a serious indictment of your fitness to represent the conductors.

You state to President Whitney that you will refrain from giving copies of your letter to the Press until such time as he again breaks into print.

He has informed us, and we are very glad to inform you, that he does not fear your threats, your slanderous tongue, or your cowardly silence—all are equally contemptible. His message to you is to cut loose in the Press just as quickly as you choose.

If we accept what we read in the Press, we would have to come to the conclusion that Mr. Harrison is the head of your organization, and that the O. R. C. is leaderless and helpless for all that you are doing.

Your dirty and cowardly attempt to create the impression of disagreement among the officers of the Brotherhood of Railroad Trainmen is only another proof that you are not fit to head a labor organization, and not fit to associate with redblooded men. Your reference to this matter at the present time in the first place is none of your business; in the next place it is proof of the fact that you would stoop to falsehood in order to strike at a man in whose ability and integrity the membership of the B. of R. T. has full and complete confidence. It merely indicates your ability to crawl on your belly to undertake to embarrass someone.

We have harmony in the Brotherhood of Railroad Trainmen. We are standing together to defend ourselves against wage cuts, against impositions that the employers may undertake to perpetrate against our members, and against lies and misrepresentations that are being heralded about us by men like you.

We want to say to you, Jimmy, that the B. of R. T. will not accept a wage cut, but we are not quite so sure about you, because there is a streak of yellow running down your spine, and according to the current reports you have to wash your underwear every hour or so.

The situation on the Western Pacific will be taken care of, and undoubtedly not to your liking, and in spite of your protests.

In conclusion, as President Whitney stated to us this morning, your letter is added proof of the diabetic condition of your mind. You lost your head because certain facts were leveled at you, and you indulged in an uncontrollable diarrhea of words which

have no meaning to you or to anyone else. This of course does not surprise us. It was to be expected. It presents a perfect picture of the character involved. The issues in the case you have completely hidden under your trickling vocabulary and the smoke screen which you undertake to set up by referring to matters that have nothing to do with the mighty issue we are fighting today.

Brother Whitney this morning also informed us that,

"If he was worth the skinning I would drag him into the stalls; but long ago I learned that the hide of a skunk isn't worth the trouble of taking."

We want to send this message to you and hope that you won't lose your guts; that you won't betray your membership; that you won't doublecross the boys, and we know that hundreds of members of the O. R. C. are holding their breath, fearing what you will do, and wondering if you are a man or a mouse.

Results will tell, but if you have half the stamina and half the nerve of President Whitney in this fight, it will not result in any wage cut. To resort to abuse, to falsehood and vilification, to drag out personal grievances, will not help us in this fight. You and President Whitney can fight that out between yourselves, and we are satisfied that President Whitney will be able to take care of himself, and also able to take care of you, with your loud-mouthed slanders and falsehoods.

They tell us that when you are in Cedar Rapids and the "man-in-the-moon" goes over the city that he holds his nose for the stink that arises.

Jimmy, you are an intellectual inkfish.

Yours truly,

BY THE WAGE COMMITTEE, BROTHERHOOD OF RAILROAD TRAINMEN

Chairman

Secretary

Approved by members of International Association of General Chairmen, Brotherhood of Railroad Trainmen.

(Continued on next page)

(*Continued from preceding page*)

U N Hartman Gen Chairman P.R.R. - East
E Z Swan Gen. Chairman N.Y.C. - West
R J Jones Gen Chmn. W.R.E. Ry.
B [illegible] Gen. Chmn. S.P. Co. (Lines)
[illegible] General Chairman C.R.I. Ry.
O P Goss Genl Chmn Monon
W J Kilcoyne, Wabash Railroad

Train-Connection Bus Service Expanded

THE train connection bus service of the Union Pacific from East Los Angeles to the Los Angeles suburban area, described in the *Railway Age* of July 27, 1935, has been expanded considerably as the result of the establishment of the Challenger and the City of Los Angeles schedules since that time. It is operated by the Union Pacific Stage Company, a wholly-owned subsidiary of the railway, and the buses are serviced in the garage of the Interstate Transit Lines, the Union Pacific's transcontinental bus subsidiary.

The train connection bus routes fan out in several directions from the rail station at East Los Angeles, which was built in 1929 to serve especially as a terminus for the train connection buses and also to provide an easily accessible station which could be reached by private automobiles without the necessity of driving through the congested areas of downtown Los Angeles.

Under the present schedules, each of the passenger trains into and out of East Los Angeles is provided with a motor coach connection to or from the three routes operated. The San Pedro route also serves Hynes and Long Beach as well as several street stops. The Glendale route also serves Pasadena and intermediate street stops, and the Anaheim route also serves Whittier, La Habra and Fullerton. The Los Angeles Limited and the Challenger arrive and depart from East Los Angeles within five minutes of each other, so that the same buses serve both trains. On all routes, the buses for these trains westbound leave at 8:15 a. m., 12 min. after the arrival of the first train. The San Pedro run is made in 1 hr. 20 min., and the Glendale and Anaheim runs in 1 hr. each.

The bus connections for these two trains westbound leave San Pedro at 6:25 p. m., and Glendale and Anaheim at 7:00 p. m., and all three arrive at East Los Angeles at 8:05 p. m., 20 minutes before the departure of the first train.

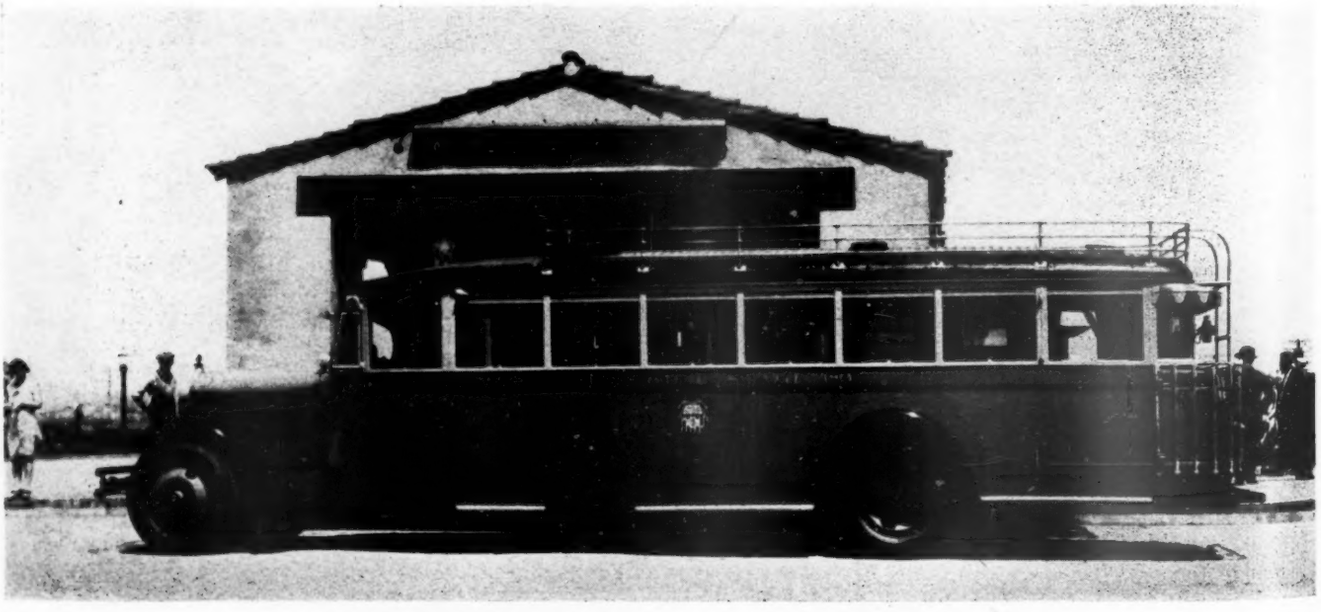
Daily Service Provided

A further daily service is provided on all three routes for the Pacific Limited, which arrives in the evening and departs in the morning. The schedules are so arranged that the same buses that bring westbound passengers to East Los Angeles for this train also take care of the westbound passengers of the two trains previously mentioned on their morning runs, and reverse these operations on their evening runs, thus providing the service with a minimum of equipment.

The bus connections for the City of Los Angeles are operated over all three routes for both the east and westbound streamliners. However, since these trains are only operated ten times per month in each direction, their train-connection buses are operated only on the days the trains run.

A fourth bus service is also provided on all three routes for the eastbound and westbound California Fast Mail. However, since this train is essentially an express and mail train, its bus connections are operated only when there are passengers desiring them.

With so many factors entering into the increased passenger traffic to and from Los Angeles via the Union Pacific, it is difficult to measure the effect of any one factor. However, Union Pacific passenger officers are unanimous in attributing a share of the increase to the improved service provided by the train connection buses.



A Union Pacific Train Connection Bus at the East Los Angeles Station

Study Throws Light on Railroad Scrap

Carriers sold 100,000 carloads in 1937—Sorting extensive—Tonnage and prices of different grades compared

OF THE 5,700,000 tons, or approximately 100,000 carloads, of worn and discarded materials sold by the railroads last year, approximately 1,670,000 tons, or about 30 per cent, was first converted by the railroads into No. 1 melting steel in which the metal must be ¼ in. or more in thickness, 18 in. or less in width and 4 ft. or less in length, free from attachments. This scrap produced approximately $28,000,000, or 48 per cent, of the $68,000,000 received by the railroads from their scrap sales last year.

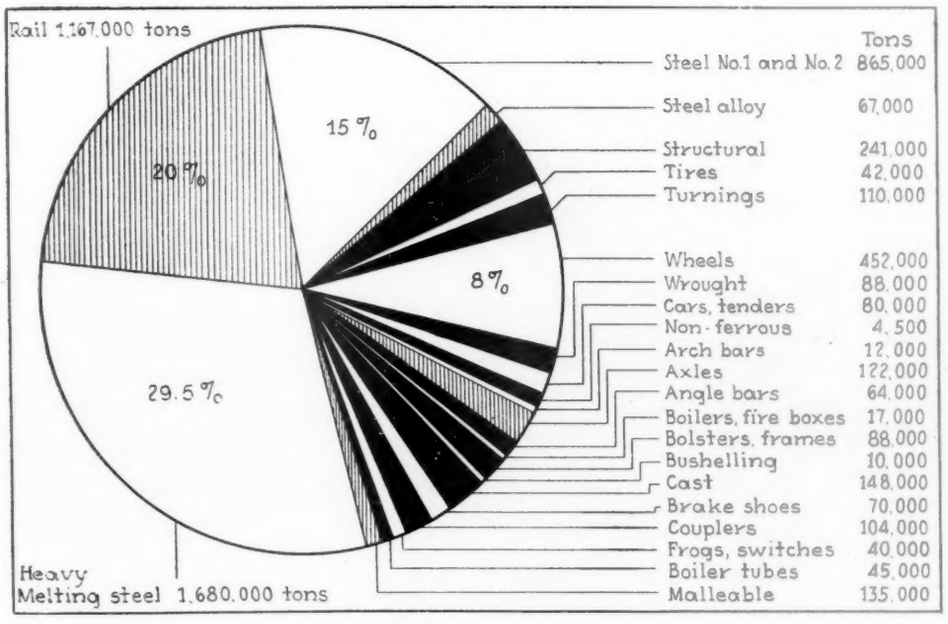
As nearly as can be estimated from available data, the next largest item of scrap sold last year was old rail, totaling approximately 1,167,000 tons, or 20 per cent of the total. Next in order was scrap steel under ¼ in. thick, which amounted to approximately 374,000 tons, or 6.6 per cent of the total. Next came cast iron wheels, totaling 321,878 tons, or about 5.7 per cent of the total. Scrap sold as wrought iron totaled approximately 88,000 tons, or 1.5 per cent of the total; axles totaled 122,000, or 2.6 per cent; and uncut structural steel totaled approximately 241,000 tons, or 4.2 per cent. Non-ferrous scrap totaled approximately 53,000 tons, or 0.9 per cent of the total, and produced nearly $5,000,000. The scrap wheels and non-ferrous scrap excluded tonnage sold direct to manufacturers in exchange for new materials of the same kind. These details were obtained from an analysis of the scrap sold by 20 railroads, after determining the approximate combined tonnage and sales from reports made earlier by almost all of the railroads.*

While the Association of American Railroads, working in conjunction with buyers of scrap, has recommended a scrap classification for the use of the railroads which prescribes by serial numbers 45 varieties and grades of scrap iron and steel, 20 varieties and grades of non-ferrous scrap and 12 grades of rubber, rope and miscellaneous materials, the analysis shows that many roads do not follow the standard grading. A larger number of roads use their own classification numbers. Railroads with large tonnages practically all sold grades of scrap not covered by the standard or their own classification, and very little grading is performed on some roads. Some roads sell all of their iron and steel on a net ton basis, others use the gross ton basis, and still others use both.

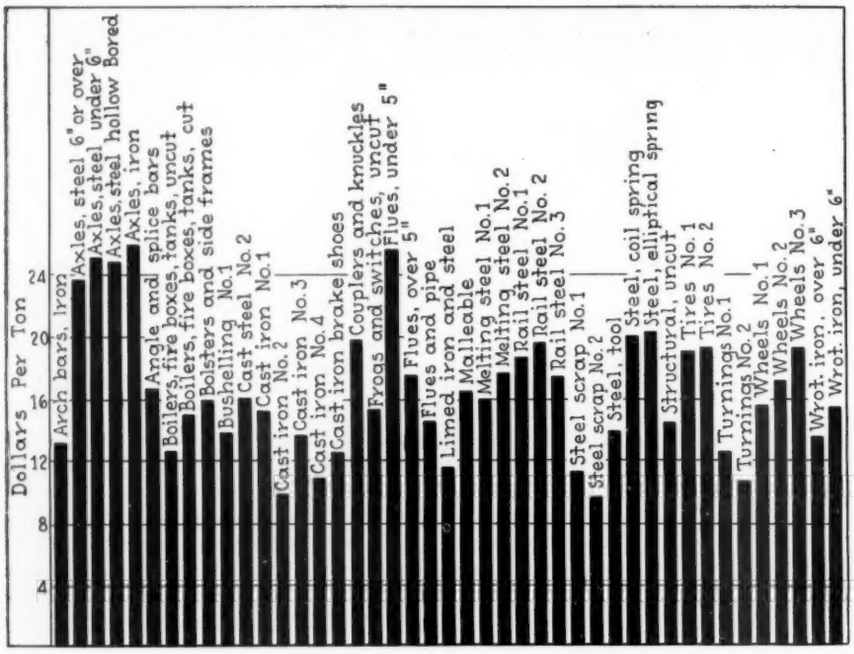
Numerous Special Grades

The iron and steel on one road, totaling 27,000 tons, was sold in 35 standard and 6 special classes. The 49,000 tons on another road were sold in 34 standard and 6 special grades. The 111,000 tons on a third road were sold in 35 regular and 8 special grades. The 84,000 tons on still another road were sold in 24 regular and 2 special grades. One road with 24,000 tons sold 18 grades. Another sold 56,000 tons in 2 grades. Still another road sold 7,500 tons in 8 grades, while less than 6 grades were used by roads selling 1,000 tons or less during the year. Approximately 30 special grades of scrap were listed among the sales reported by the 20 railroads. Among the special items were coupler yokes, scrap wire rope, chain, machinery, galvanized sheets, secondhand angle bars, scrap steel bodies, scrap Gantry cranes, brake

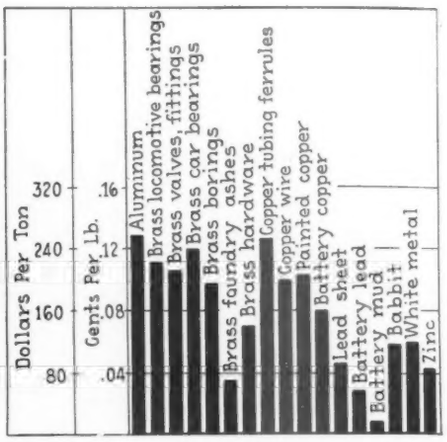
* *Railway Age*, April 16, 1938.



Approximate Divisions of Railway Scrap Sales in 1937



Comparative Prices Received by Railroads for 45 Classes of Iron and Steel Scrap Sold in 1937



Comparative Prices Received by Railroads for Non-Ferrous Scrap Sold in 1937

beam channels, flues over 18 ft. in length, galvanized drip pans, light weight painted sheets, draft gears, underframes, wheels on axles, car sheets, tie plates and unsorted scrap.

Wide Range of Prices

Data on prices obtained for the scrap were insufficient to enable one scrap district to be compared with another, but the variations in the average prices obtained for different grades of stock show the reason for the sorting and grading followed by most railroads in preparing their scrap for sale, and especially the reason for converting so much of the scrap into the melting steel grade. Steel axles over 6 in. in diameter averaged $24.72 per ton, and angle and splice bars $16.43. Uncut boilers and fireboxes brought $12.56 per ton, cut boilers and fireboxes, $14.85. Cast iron under 30 in. in width and length and under 150 lb. in weight brought $15.01, cast iron weighing between 150 lb. and 500 lb. brought only $9.71; and burnt cast iron only $10.73. Cast iron brake shoes brought $12.47, couplers and knuckles $19.87. Uncut frogs and switches averaged $15.23.

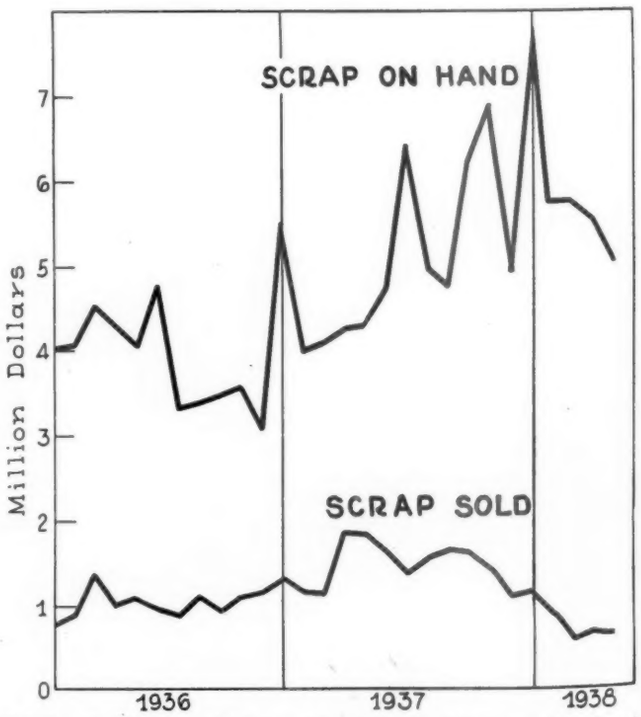
Flues under 5 ft. in length averaged $25.65 per ton, flues over 5 ft. $17.24, mixed flues and pipe, $14.32. The malleable average was $16.13. Melting steel No. 1 averaged $15.95, and melting steel No. 2, consisting of side rods, pistons and similar heavy materials, averaged $17.70. Steel rail over 5 ft. for rerolling averaged $18.23, short rails, $19.40, and short rails mixed with angle bars, $17.21.

Steel scrap under ¼ in. in thickness averaged $11.05, and miscellaneous steel scrap, $9.67. Spring steel averaged $20.20, and uncut structural, $14.31. Tires averaged $18.89, turnings and borings, $12.41, and the three grades of wheels averaged $15.46, $17.05 and $19.06, respectively. Wrought iron over 6 in. in length averaged $13.48.

Big Values for Old Brass

In the aggregate, 31 grades of non-ferrous scrap were reported, averaging in the composite $9.26 a hundred, or $185.20 per ton, as compared with $15.90 per ton paid for iron and steel scrap. Reported sales of aluminum averaged $12.81 a cwt., locomotive bearings, $11.04 a cwt., brass valves and steam connections, $10.74, clean car journal bearings, $10.74, brass and bronze borings and turnings, $11.97, and brass coach trimmings, $6.80. One road sold its foundry ashes for $3.52 per cwt. Heavy bare copper wire averaged $12.31, light wire, $9.82, and insulated wire, $2.07. Lead pipe brought $4.50, Babbitt, $5.83, and zinc, $2.07.

Since these sales were made, the prices offered by dealers for scrap iron and steel have been drastically reduced, and costs of sorting the scrap into different



Relative Trends in the Volume of Iron and Steel Scrap on Hand and Sold—80 Railroads, January, 1936, to June, 1938

grades have been increased, indicating a narrowed margin between the prices and costs which may reduce the number of grades into which many railroads are preparing their tonnage this year.

Railroad Scrap Sales, 1937*

A. A. R. Class		Total tons	Per cent	Avg. price per ton
1	Arch bars, iron	9,326	.16	$13.20
1a	Arch bars, steel	2,905	.05	....
2	Axles, steel, 6 in. and over	34,352	.60	23.74
3	Axles, steel, under 6 in.	84,624	1.48	24.72
4	Axles, steel, hollow bored	870	.01	24.87
5	Axles, iron	2,218	.04	25.81
6	Angle and splice bars	64,366	1.10	16.43
7	Boilers, fireboxes, tanks, uncut	11,263	.20	12.56
8	Boilers, fireboxes, tanks, cut	5,956	.10	14.85
9	Bolsters and side frames	88,337	1.55	15.77
10	Bushling No. 1	9,988	.17	13.79
10a	Bushling No. 2	.....	...	....
11	Cast steel No. 2	11,067	.19	15.90
12	Cast iron No. 1	85,225	1.50	15.01
13	Cast iron No. 2	3,419	.06	9.71
14	Cast iron No. 3	28,629	.50	13.56
15	Cast iron No. 4	19,793	.35	10.73
16	Cast iron brake shoes	69,709	1.22	12.47
17	Couplers and knuckles	103,571	1.82	19.87
18	Frogs and switches, uncut	40,026	.70	15.23
19	Flues, under 5 in.	3,885	.07	25.65
20	Flues, over 5 in.	1,642	.03	17.24
21	Flues and pipe	32,918	.58	14.32
22	Limed iron and steel	6,005	.10	11.57
23	Malleable	134,908	2.40	16.13
24	Melting steel No. 1	1,670,348	29.30	15.95
25	Melting steel No. 2	9,902	.17	17.70
26	Rail, iron	306	...	....
27	Rail, steel, No. 1	374,282	6.60	18.23
28	Rail, steel, No. 2	64,733	1.11	19.40
29	Rail, steel, No. 3	728,532	12.80	17.21
30	Steel, scrap, No. 1, under ¼ in.	56,890	1.00	11.05
31	Steel scrap, No. 2, misc.	807,697	14.20	9.67
32	Steel, tool	49	...	13.67
32a	Steel, alloy	3,505	.06	....
33	Steel, manganese	1,900	.03	....
34	Steel, spring, coil	33,261	.58	19.99
34a	Steel, spring, elliptical	28,947	.50	20.20
35	Structural, uncut	241,188	4.23	14.31
36	Tires, No. 1, 36 in. and over	31,484	.55	18.89
37	Tires, No. 2	10,858	.19	19.08
38	Turnings, No. 1	28,506	.50	12.41
39	Turnings, No. 2	82,001	1.44	10.60
40	Wheels, No. 1	321,878	5.65	15.46
41	Wheels, No. 2	55,003	.96	17.05
42	Wheels, No. 3	74,722	1.31	19.06
43	Wrought iron and soft steel No. 1, over 6 in.	32,759	.57	13.48
44	Wrought iron and soft steel No. 2, under 6 in.	55,199	.97	15.32
45	Steel cars and tenders	79,575	1.40	....
46–51	Non-ferrous	51,473	.90	185.20
	Total	5,700,000	100.00	

* Subdivisions based on reports of 20 railroads.

* * *

A West Shore (New York Central) Coal Drag Passing Over Rondout Creek Viaduct Near Rosendale, N. Y.

Communications . . .

Furloughed Employees Urge F.D.R. End "Hogging"

LIVINGSTON, MONT.

TO THE EDITOR:

As a furloughed fireman with 21 years rights with the Northern Pacific, I have been reading with a great deal of interest, articles appearing in your magazine.

I, with many others, am grateful for the help you are giving us in the fight to try and do something about the greed of these so-called old heads.

Several months past we took the matter up through our local Chamber of Commerce and the local business men. We found on reliable authority that there was on deposit in local institutions an amount approximating $2,500,000. Much of this had been deposited by these "old heads." Livingston is a typical railroad town of about 6700 population. It is a division point and extensive repair shops are located here. These older employees are usually men around 60 years of age whose families have been reared and are now dispersed, and their needs consequently are few.

An engineer who gets in his mileage (3800) in freight service receives $371.26 per month ($9.77 per hundred miles). Of course, a large proportion of this amount is taken out of circulation each pay day and goes to swell this huge sum on deposit. Conductors who have no mileage limit at all receive around $350 per month. Business men were quick to realize that if only a part of this monthly payroll could be placed in the hands of the younger men, it would help local business conditions materially. Several of them, I know, wrote our Congressmen, but you know the inevitable result—we seemed to get nowhere.

If it is only a matter of votes, it would seem that our Congressmen would take into consideration the fact that nearly as many rail employees are furloughed as are actively employed, and coupled to this potential voting power is a fast rising public sentiment against the greedy tactics of these older men.

I am enclosing herewith a copy of a letter addressed to President Roosevelt which we are circulating among men on this division for their signatures. The response from the men has been gratifying, many of the older men signing, for they can read the handwriting on the wall. Any publicity you care to give this movement will be all right with those sponsoring the movement. If others will follow suit we believe we can accomplish some good.

Again thanking you for your interest in the younger men (for we sincerely believe the future of the railroads rests with them), we beg to remain

Yours truly,

L. F. DIVINE.

The letter to President Roosevelt reads as follows:

Dear Mr. President:

We, the undersigned, wish to most respectfully call your attention to certain abuses affecting junior rail employees in the train and engine service of the railroads of the United States, and earnestly solicit your aid in bringing about a remedy for the situation.

There are at the present time thousands of men with years of railway experience to their credit, who find themselves without employment in their chosen profession, while others in that same profession, who may have only a few months or at best a few years added seniority, are making from 35 to 60 days (3500 to 6000 miles) per month. Such a condition is commonly referred to among rail employees as "mileage hogging." This practice of mileage hogging is encouraged and abetted by the so-called "Four Brotherhoods" in spite of the protests of a large proportion of their membership and the public at large, who are interested in seeing as many men as possible given employment at this crisis in our national life. Because of their powerful political influence, and because of the fact that these organizations are dominated by a few of the so-called "old heads," we believe you have had the facts regarding this most un-American situation kept from you.

It is to advise you at this time that such a condition does exist and calls for immediate action, that we use this occasion to approach you on the subject. We find these self-same "Brotherhoods" (of which we are, or have been members), most emphatically advertising their allegiance to the "New Deal," while at the same time they are using their utmost efforts to favor the older employees at the expense of the junior men, and thereby increase unemployment. Furthermore, we found these same organizations lending their moral and financial support to the move to secure a national law limiting men in other industries to a maximum

40-hour week, while their own members, because of greed, insisted on a 60 to 90-hour week for themselves. Such hypocrisy cannot long be hidden, and its effects on the public at large is doing much to discredit the New Deal.

We, who with thousands of others, have given the best years of our lives to the railway service and many of whom find themselves without jobs, because of the unholy greed of a few men who dominate the "Four Brotherhoods" can not be expected to support an administration which countenances such action.

We sincerely believe that if you will make an honest investigation of the above mentioned conditions, you will be convinced of the justice of our cause and being convinced will use your efforts to bring about a remedy for these conditions.

Much unemployment in railway circles can be overcome by legislation to limit to a reasonable amount, the number of days operating employees be allowed to work in any given month.

Brotherhood heads would undoubtedly oppose such action, but we do not believe they truly represent the will of the rank and file of their membership, and we insist such opposition be ignored, in the interests of the men themselves and the nation at large.

New Books . . .

Proceedings of the American Railway Engineering Association for 1938—920 pages, 6 in. by 9 in. Bound in cloth or half Morocco. Published by the association, 59 East Van Buren street, Chicago. Price, cloth $8, half Morocco $9.

The current volume of the proceedings contains a complete record of the work of this association for the year 1937-1938, ending with the activities of the thirty-ninth annual convention, held at Chicago on March 15, 16 and 17, 1938, and includes a report of the business session of the convention, together with an address by Charles Donnelly, president, Northern Pacific, before the annual luncheon of the association on March 16, 1938. The feature of the proceedings, as in past years, is the presentation in full of the committee reports presented at the convention, together with the discussion which followed the presentation of each report. The volume includes the reports presented by 27 standing and special committees of the association, which cover a total of 122 subjects of pertinent interest to railway engineering, maintenance of way and operating officers. A review of these subjects makes evident a widening scope of activity on the part of the association to meet the demands of modern rail transportation, and still further increased interest on its part in research and in field and laboratory technique as a means of solving many of the problems, which confront engineering and maintenance officers.

Among the subjects reported on are five relating to railway buildings; six relating to masonry structures; three relating to iron and steel structures; seven relating to water service, fire protection and sanitation; seven with regard to yard, terminal and shop facilities; three with reference to wood preservation; five with regard to roadway matters; six with regard to crossties; eleven having to do with rail and related subjects; seven with regard to track; four with reference to highways; eleven concerning matters related to the economics of railway location and operation; nine having to do with the economics of railway labor; six with specific regard to maintenance of way work equipment; and two relating to waterways and harbors. In addition to these general reports, the proceedings present a number of new or revised specifications and plans acted upon at the last convention.

Along the Iron Trail, by Frederick H. Richardson and F. Nelson Blount. 206 pages. 9 in. by 6 in. Bound in cloth. Published by the Tuttle Publishing Company, Inc., Rutland, Vt. Price $2.95.

The authors of this work are aged 20 and 19, respectively. Both are railroad "fans" and have made the personal contacts necessary for compilation of the book by traveling about the countryside during vacation periods.

The book is in reality a collection of photographs carefully selected to appeal to the average railroad "fan." The text material is quite secondary and far too brief to cover adequately the ground laid out by such chapter headings as "History," "Competition" and "Development of Motive Power." The last two chapters, however, are real contributions to the literature of railroading. One, entitled "Sand House Talk," is a loose collection of anecdotes and "boomer" tales perfectly suited to a book of this type. The other, "Railroading as a Hobby," is a well-written review of the "fan" movement, together with a brief history of the authors' own careers.

The photographs are a particularly happy selection. The majority of them are fine action shots, while a great deal of attention is paid to interesting "old-time" equipment. In view of the great number of illustrations, totaling some 148, the book is surprisingly inexpensive, probably due to the fact that almost all of the engravings are either "by courtesy" or contained in the copious files of H. W. Pontin's "Railroad Photographs." These borrowed "cuts" the resourceful young authors have adapted to the required dimensions of their pages most ingeniously.

The book is undoubtedly a pioneer in the literature written expressly for railroad hobbyists and forms an effective American counterpart of the fascinating railroad books enjoyed for many years by our British friends.

The Universal Directory of Railway Officials and Railway Year Book, 1938-39 edition. Compiled from official sources under the direction of the editor of the Railway Gazette (London). 604 pages, 8½ in. by 5½ in. Bound in cloth. Published by the Directory Publishing Company, Ltd., 33 Tothill street, Westminster, London, S. W. 1, England. Price 20 shillings.

This is the forty-fourth edition of the Universal Directory. No important change has been made in the scope of classification of material, and the individual directories of officers and descriptions of gage, mileage, etc., of some 1,900 important railroad systems in all countries are presented as usual. The principal changes required by recent events are the listing of the former Austrian Federal Railways as a part of the German State Railway and the combining of the former French privately-owned systems into the French National Railways. The effects of current wars in Spain and in the Far East are also described briefly, indicating the efforts of the publishers to keep the Directory up-to-date.

The tables listing fast train runs have undergone considerable revision and constitute one of the most timely sources of information on this subject. A separate table appears for the fastest scheduled runs in the United States, covering the situation as of the summer of 1937.

A Quarter of a Century with the Traveling Public and What it Taught Me, by Edwin Kachel. 113 pages. 7½ in. by 5¼ in. Bound in paper. Privately published. Price $1.

This small book is a collection of the views of a man who has been a dining car steward in the service of the Great Northern since 1911, and is, at present, assigned to a run between Seattle, Wash., and Portland, Ore. The work is written loosely around the theme of service and contains hints which he feels "are worthy of application to your own business." While most of the anecdotes presented concern the great and near-great whom Mr. Kachel has met in the course of his career, the sections entitled "Humanized Technique" and "Service Talks" furnish good advice to that large majority of railroad officers and employees who must learn to please people.

Carriers too poor to buy new equipment might gain hope from the author's observation that man-power often outshines rolling stock in public appeal and that an excellent dining car crew can make up in large measure for the lack of a streamliner. He believes also in widening the area of service to all classes of passengers.

Apropos of the increasing use of the diners by coach passengers he writes: "Some of the older stewards probably remember years ago, when they passed through the day coaches making the first call, that passengers would reach down for their lunch baskets. Now, when giving that call, he enjoys the thrill of heading a parade."

NEWS

Big Turnout For Transport Clinic

Fifty already lined up for September 14-15 sessions of U. S. C. of C.

About 50 representatives of transportation, shipper and financial interests will participate in the Transportation Conference to be held under the auspices of the Chamber of Commerce of the United States in Washington, D. C., September 14-15, the Chamber announced on September 5. The Conference "will seek to develop a co-ordinated transportation program, harmonizing the viewpoints of interested groups, for submission to the next session of Congress."

The interests that will be represented, as shown by a partial list of acceptances, include railroads, bus and truck companies, intercoastal, coastwise and inland water lines, air transport operators, banks and insurance companies, and shippers in many lines such as steel, coal, brick, building materials, chemicals, cotton, groceries, grain, milling, livestock and agriculture.

George H. Davis, president of the Chamber, has pointed out that the Conference will take up "the numerous proposals for transportation legislation that have been put forward in recent months, notably the recommendations of the members of the White House Conference on the railroad situation; the 'Railroad Program' advocated by the Association of American Railroads; and other suggestions advanced by different organizations. The main purpose is to select from all of these recommendations a practical program which can reasonably be expected to be enacted into law at the next session of Congress and to work out a plan of co-ordinated effort for its adoption."

Among those who have signified their intention of attending the Conference are:

Samuel T. Bledsoe, president, Atchison, Topeka & Santa Fe.

John J. Pelley, president, Association of American Railroads.

R. V. Fletcher, vice-president and general counsel, Association of American Railroads.

F. E. Williamson, president, New York Central.

Charles Donnelly, president, Northern Pacific.

E. E. Norris, president, Southern.

L. W. Baldwin, chief executive officer, Missouri Pacific.

J. M. Hood, president, American Short Line Railroad Association.

Arthur M. Hill, president, Atlantic Greyhound Corporation, Charleston, W. Va.

E. W. Wakelee, vice-president, Public Service Co-ordinated Transport, Newark, N. J.

H. D. Horton, president, Horton Motor Lines, Inc., Charlotte, N. C.

Ted V. Rodgers, president, American Trucking Associations, Inc.

Chester H. Gray, director, National Highway Users Conference.

R. D. Lapham, chairman of the board, American-Hawaiian Steamship Company, San Francisco, Calif.

Edward Clemens, vice-president, Mississippi Valley Barge Line Company, St. Louis, Mo.

Julius H. Barnes, president, Erie & St. Lawrence Corporation, New York.

Gilbert R. Johnson, counsel, Lake Carriers' Association, Cleveland, Ohio.

W. A. Patterson, president, United Air Lines.

Edgar S. Gorrell, president, Air Transport Association of America.

Harry A. Wheeler, president, Railway Business Association.

H. S. Snow, president, Associated Traffic Clubs of America.

J. A. Gordon, president, Transportation Association of America.

(*Continued on page 389*)

June Has Deficit of $15,954,225

Compares with a net income of $18,359,775 for sixth 1937 month

Class I railroads reported a deficit, after fixed charges and other deductions, of $15,954,225 in June, 1938, as compared with a June, 1937, net income of $18,359,775, ac-

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 136 Reports (Form IBS) Representing 141 Steam Railways
(Switching and Terminal Companies Not Included)
TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of June 1938	For the month of June 1937	*Income Items*	For the six months of 1938	For the six months of 1937
$25,000,807	$59,354,316	1. Net railway operating income	$70,289,303	$299,466,300
12,688,409	15,585,908	2. Other income	68,250,370	71,571,398
37,689,216	74,940,224	3. Total income	138,539,673	371,037,698
2,021,744	1,449,766	4. Miscellaneous deductions from income	12,283,925	10,308,905
35,667,472	73,490,458	5. Income available for fixed charges	126,255,748	360,728,793
		6. Fixed charges:		
10,534,174	14,026,827	6-01. Rent for leased roads and equipment	62,543,175	75,019,655
39,865,674	39,861,260	6-02. Interest deductions	†237,607,084	†239,284,436
209,275	234,855	6-03. Other deductions	1,280,944	1,394,420
50,609,123	54,122,942	6-04. Total fixed charges	301,431,203	315,698,511
*14,941,651	19,367,516	7. Income after fixed charges	*175,175,455	45,030,282
1,012,574	1,007,741	8. Contingent charges	6,078,141	6,134,141
*15,954,225	18,359,775	9. Net income	*181,253,596	38,896,141
16,854,779	16,310,789	10. Depreciation (Way and structures and Equipment)	100,913,628	97,506,981
937,685	3,726,927	11. Federal income taxes	5,806,141	17,778,533
		12. Dividend appropriations:		
580,688	12,301,370	12-01. On common stock	30,155,813	54,667,525
224,565	1,442,231	12-02. On preferred stock	5,480,351	9,797,585

Selected Asset Items	Balance at end of June 1938	Balance at end of June 1937
13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$655,345,827	$699,202,518
14. Cash	$314,807,337	$451,135,417
15. Demand loans and deposits	7,796,776	8,299,530
16. Time drafts and deposits	17,209,564	39,519,222
17. Special deposits	65,980,966	321,257,519
18. Loans and bills receivable	2,441,519	9,531,146
19. Traffic and car-service balances receivable	50,479,273	60,896,468
20. Net balance receivable from agents and conductors	41,200,001	53,278,997
21. Miscellaneous accounts receivable	130,074,183	145,781,010
22. Materials and supplies	355,258,007	371,342,681
23. Interest and dividends receivable	22,565,534	25,570,837
24. Rents receivable	1,555,473	1,937,006
25. Other current assets	4,989,961	7,372,136
26. Total current assets (items 14 to 25)	$1,014,358,594	$1,495,921,969
Selected Liability Items		
27. Funded debt maturing within 6 months‡	$220,337,495	$93,184,491
28. Loans and bills payable§	$250,982,938	$211,912,833
29. Traffic and car-service balances payable	68,982,523	83,616,555
30. Audited accounts and wages payable	221,009,315	258,295,528
31. Miscellaneous accounts payable	72,526,018	144,967,749
32. Interest matured unpaid	755,070,550	616,774,612
33. Dividends matured unpaid	7,506,535	11,220,265
34. Funded debt matured unpaid	526,494,816	509,169,868
35. Unmatured dividends declared	769,652	10,333,391
36. Unmatured interest accrued	83,784,233	90,609,631
37. Unmatured rents accrued	23,537,560	24,349,168
38. Other current liabilities	24,878,525	30,371,253
39. Total current liabilities (items 28 to 38)	$2,035,542,665	$1,991,620,853
40. Tax liability (Account 771):		
40-01. U. S. Government taxes	$57,601,790	$113,436,484
40-02. Other than U. S. Government taxes	149,910,277	137,788,555

† Represents accruals, including the amount in default.
‡ Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.
§ Includes obligations which mature not more than 2 years after date of issue.
* Deficit or other reverse items.

NET INCOME OF LARGE STEAM RAILWAYS WITH ANNUAL OPERATING REVENUES ABOVE $25,000,000

(Switching and Terminal Companies Not Included)

Name of railway	Net income after deprec. For the six months of 1938	Net income after deprec. For the six months of 1937	Net income before deprec. For the six months of 1938	Net income before deprec. For the six months of 1937
Alton R. R.	*$1,257,434	* $448,997	*$1,082,648	* $273,111
Atchison, Topeka & Santa Fe Ry. System⌀	* 2,968,286	3,262,878	2,988,957	8,893,905
Atlantic Coast Line R. R.	371,997	2,123,658	1,401,463	3,141,430
Baltimore & Ohio R. R.	*11,741,308	11,756	* 8,082,872	3,621,109
Boston & Maine R. R.	* 2,634,148	654,707	* 1,826,136	1,459,135
Central of Georgia Ry.†	* 1,754,353	* 800,308	* 1,326,521	* 406,820
Central R. R. of New Jersey	* 1,846,435	* 471,700	* 1,138,231	246,531
Chesapeake & Ohio Ry.	5,729,462	15,668,957	9,882,529	19,790,760
Chicago & Eastern Illinois Ry.‡	* 1,210,112	* 393,174	* 907,056	* 89,544
Chicago & North Western Ry.‡	*11,143,611	* 8,438,333	* 8,608,099	* 5,957,099
Chicago, Burlington & Quincy R. R.	* 3,235,581	452,639	* 709,595	2,860,038
Chicago Great Western R. R.‡	* 1,316,563	* 759,399	* 1,047,771	* 494,976
Chicago, Milwaukee, St. Paul & Pacific R. R.‡	*12,140,063	* 7,010,782	* 9,277,800	* 4,295,036
Chicago, Rock Island & Pacific Ry.‡	* 8,141,175	* 6,377,129	* 6,061,857	* 4,346,768
Chicago, St. Paul, Minneapolis & Omaha Ry.	* 1,672,100	* 1,744,162	* 1,377,741	* 1,447,637
Delaware & Hudson R. R.	* 746,244	129,720	* 222,285	661,500
Delaware, Lackawanna & Western R. R.	* 2,172,745	587,145	* 935,693	1,848,763
Denver & Rio Grande Western R. R.‡	* 3,999,124	* 3,326,881	* 3,387,803	* 2,754,198
Elgin, Joliet & Eastern Ry.	* 555,296	1,114,344	* 53,917	1,558,485
Erie R. R. (including Chicago & Erie R. R.)§	* 7,358,376	1,286,233	* 5,479,894	3,192,024
Grand Trunk Western R. R.	* 3,218,930	171,177	* 2,654,291	679,826
Great Northern Ry.	* 7,088,655	89,866	* 5,235,895	1,901,393
Illinois Central R. R.	* 1,930,816	* 1,618,888	1,313,786	1,522,706
Lehigh Valley R. R.	* 2,251,129	* 416,639	* 1,161,465	713,838
Long Island R. R.	* 1,334,352	* 1,190,324	* 746,193	* 604,880
Louisville & Nashville R. R.	* 1,125,303	3,895,090	1,037,493	5,976,714
Minneapolis, St. Paul & Sault Ste. Marie Ry.‡	* 3,874,359	* 3,196,966	* 3,259,400	* 2,605,977
Missouri-Kansas-Texas Lines	* 2,681,567	* 623,554	* 2,020,932	* 31,416
Missouri Pacific R. R.‡	* 9,667,125	* 5,462,530	* 7,476,572	* 3,373,320
New York Central R. R.¶	*17,548,397	6,495,124	* 9,509,176	14,502,820
New York, Chicago & St. Louis R. R.	* 1,884,421	1,378,242	* 1,028,720	2,190,787
New York, New Haven & Hartford R. R.‡	* 6,808,923	* 2,101,385	* 5,115,877	* 394,292
Norfolk & Western Ry.	4,800,071	16,031,139	7,292,204	18,397,607
Northern Pacific Ry.	* 6,897,282	* 2,497,631	* 5,202,143	* 887,308
Pennsylvania R. R.	* 4,499,776	14,734,403	8,088,462	27,110,773
Pere Marquette Ry.	* 2,212,433	1,094,647	* 1,012,003	2,373,830
Pittsburgh & Lake Erie R. R.	234,457	2,200,948	1,357,657	3,078,454
Reading Co.	357,332	4,327,842	1,925,819	5,878,143
St. Louis-San Francisco Ry.‡	* 7,107,358	* 3,976,717	* 5,545,004	* 2,404,685
St. Louis Southwestern Lines‡	* 934,322	* 725,232	* 623,316	* 424,013
Seaboard Air Line Ry.†	* 3,529,177	* 1,572,508	* 2,509,129	* 611,390
Southern Ry.	* 3,862,642	1,722,199	* 2,328,466	3,290,960
Southern Pacific Transportation System‖	*11,773,825	* 163,048	* 7,627,618	3,839,896
Texas & Pacific Ry.	166,118	1,266,360	763,441	1,849,625
Union Pacific R. R. (including leased lines)	2,151,373	2,192,619	5,806,409	5,544,648
Wabash Ry.†	* 4,301,531	* 1,048,449	* 3,225,735	20,432
Yazoo & Mississippi Valley R. R.	* 344,863	409,054	* 76,096	653,515

† Report of receiver or receivers.
‡ Report of trustee or trustees.
§ Under trusteeship, Erie R. R. only.
⌀ Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry., and Panhandle & Santa Fe Ry.
¶ Includes Boston & Albany, lessor to New York Central R. R.
‖ Includes Southern Pacific Company, Texas & New Orleans R. R., and leased lines. The report contains the following information: "Income reported hereon excludes offsetting debits and credits for rent for leased roads and equipment and bond interest, between companies included herein. Interest on bonds of, and rental income from separately operated solely controlled affiliated companies, whether earned or not, are included in this statement, in order that such income credits will offset income debits reflected in the net deficit of such companies. Operations of all separately operated solely controlled affiliated companies, resulted in a net deficit of $3,663,135 for the six months ended June 30, 1938, and $1,504,130 for the six months ended June 30, 1937, which is not reflected in this statement.
* Deficit.

cording to the Interstate Commerce Commission's monthly compilation of selected income and balance sheet items. For the first six months of 1938 the Class I carriers reported a deficit of $181,253,596 as compared with a net income of $38,896,141 for the same period of last year.

Ninety-six roads reported deficits for June, 1938, and 37 reported net incomes; in June, 1937, 65 reported deficits and 68 reported net incomes. The consolidated statement and that showing the net income of roads having annual operating revenues above $25,000,000 are given in the accompanying tables.

Want Lignite Rates to Move With Those on Bituminous

The Board of Railroad Commissioners of North Dakota and six other petitioners from that state have joined in asking the Interstate Commerce Commission to reconsider its Ex Parte 115 findings with respect to lignite rates in any proceedings instituted in connection with the pending application of the railroads to continue the increases in bituminous coal rates beyond the December 31 expiration date of the present tariffs. If the Ex Parte 115 increases on bituminous are terminated, the petitioners ask that lignite and lignite briquettes be accorded the same treatment; if the bituminous coal case is set for hearing they ask that it be broadened to include a hearing on their petition.

W. K. Wallace to Address Roadmasters Convention

Supplementing the program for the fifty-third annual convention of the Roadmasters and Maintenance of Way Association, which will be held at the Hotel Stevens, Chicago, on September 20-22, as published in the *Railway Age* for September 3, page 358, arrangements are being made for a luncheon meeting on Wednesday, September 21, at which W. K. Wallace, chief engineer of the London, Midland & Scottish Railway of England, will speak on European and American maintenance practices. Mr. Wallace is now touring this country with Mr. Herbert, research manager of the London, Midland & Scottish, and Professor Inglis of Cambridge University.

Club Meeting

The Car Department Association of St. Louis will hold its next meeting on September 20 at 8:00 p. m. in the Hotel Mayfair, St. Louis, Mo. F. C. Hasse, general manager, the Oxweld Railroad Service Company, will present a paper on the origin and source of supply of oxygen and acetylene and safety precautions in the handling of the gases and equipment in shops. Motion pictures showing the application of both the cutting and welding by the oxygen-acetylene process, will also be shown. A dinner will precede the meeting at 6:15 p. m.

Washout Causes C. P. Derailment

The washout of a 40-ft. embankment caused the derailment of the Canadian Pacific's Montreal-Quebec night express, train No. 358, and the death of its engineman and fireman, on September 1, at 4:30 a. m., in the vicinity of Portneuf, Que., 30 miles west of Quebec City. Heavy rains of almost cloud-burst proportions during the night of August 31 created unprecedented flood conditions in the area and caused the washout of an embankment 40 ft. high over masonry culvert 126.2, Quebec subdivision, resulting in the derailment of the locomotive, two baggage cars and a coach of the express. Passengers suffered only minor injuries.

Pension Tax Ruling

Milton E. Carter, acting commissioner of internal revenue, has made public a decision amending article 501(a) of regulations 100, approved October 12, 1937, relating to tax returns under the Carriers Taxing Act of 1937. The article is amended to read as follows:

Initial and quarterly returns of tax.—(a) *General.*—For the period beginning January 1, 1937, and ending September 30, 1937, and for each subsequent period of three calendar months ending December 31, March 31, June 30 and September 30, each employer shall prepare a return of tax, in triplicate, on Form CT-1, and each employee representative shall prepare a return of tax, in triplicate, on Form CT-2. Each employer and employee representative is required to file his own return. Consolidated returns of parent and subsidiary corporations are not permitted.

Mrs. Roosevelt Hits Southern Freight Rate Structure

Mrs. Roosevelt, writing in the September issue of the Democratic Digest, told a southern woman that three of the South's most pressing needs were the reduction of freight rates, restoration of eroded farm land and more diversified agriculture. In reply to a letter from Mrs. Charles W. Tillett, Jr., of Charlotte, N. C., asking what southern problem should receive "first emphasis," Mrs. Roosevelt said that she had heard frequent accusations that the freight rate differentials had forced the South to lower wages and poorer working conditions.

"It seems to me," she continued, "if this is so, these facts should be brought out so strongly that public demand will force placing the South on the same basis as the rest of the country, so far as transporta-

tion is concerned. At the same time, labor conditions and wages should be regulated so that no part of the country will be unfairly competing against any other in a way which makes a group of workers live on a lower standard. This automatically removes the low standard group's buying power and serves to make them a detriment to the prosperity of the country."

N. Y. Labor Day Traffic Down

Passenger business in and out of New York city suffered a general decline this Labor Day week-end compared with that of 1937, according to estimates made by reporting trunk line carriers serving the city. Theories which were afloat in traffic circles as to the cause of the decline ran the gamut of variety,—"weather was too cool," "weather so good that people stayed home," "folks have no money; it's a recession, you know." Some hinted that the Eastern fare rise to 2.5 cents per mile might have had something to do with it. On the other hand, several observers declared that travel on bus lines and river and harbor steamers declined from last year, also, and pointed out that even private automobile congestion was appreciably reduced. Anyway, business was not so good.

Reduce Rail Minimum to 200 Tons

The Inland Steel Company, on September 1, reduced the minimum applicable to the base price of rails from 500 to 200 gross tons. It is expected that other mills will take similar action. For a number of years it has been the practice of mills to observe a minimum of 500 gross tons in selling rails at the base price without the application of an extra, this minimum having been established at a time when large quantities of rails were ordered. In recent years many railroads, due to economy, ordered rails in small quantities to take care of replacements that were urgently needed, frequently necessitating the payment of an extra because the quantity ordered did not equal the minimum. According to Inland, a minimum of 500 tons is not in keeping with present day conditions, and a minimum of 200 tons will be of direct benefit to the railroads.

Motor Rights Transfer Rules and Regulations

The Interstate Commerce Commission has issued rules and regulations governing transfers of rights to operate as a motor carrier in interstate or foreign commerce. The "transfers" involved are those under sections 206, 209 and 212(b) of the Motor Carrier Act, otherwise defined in the order as including all such transactions "not included within sections 210a(b) and 213.

Section 210a(b), added at the last session of Congress, gives the commission authority to grant temporary certificates to operate, while section 213 deals with mergers and acquisitions of motor carriers, providing in paragraph (e) that transactions involving not more than a total of 20 vehicles shall be exempt unless applicant is a carrier other than a motor carrier.

Three forms were prescribed in connection with the rules and regulations which became effective September 1. The separate forms are for the filing of applications for authority to contract to operate or to lease operating rights, certificates, or permits; for authority to substitute prospective purchasers or to transfer certificates, permits or certain state operating rights; and for notification of transfer of operating rights pursuant to rule 7(a) of the rules and regulations.

New York Hearing Held on Express Rate Petition

The New York hearings on the petition of the Railway Express Agency to adjust its rate structure, docketed as Ex Parte 126, opened on September 7 in the New Yorker hotel before I. C. C. Examiner Hosmer. The first session was devoted largely to the testimony of individual shippers and consignees, who in general expressed favor of the proposed reduction in first class rates on smaller packages, and while not enthusiastic over the approximate 10 per cent increase sought on larger shipments, nevertheless admitted the necessity of the increases to produce needed express revenues.

Representatives of the Middle Atlantic Motor Carrier Conference and the New England Motor Rate Bureau appeared separately to protest the proposed lowering of rates on smaller shipments, asserting that such rates would cut under present truck minimums. E. S. Woodberry, who appeared for the latter organization, pointed to the establishment of minimum rates for the New England district by the Interstate Commerce Commission recently in MC-22 as setting a "floor" for motor truck charges. The proposed reduced express rates for small packages would force small operators out of business, he declared, while large operators would lose a large portion of profitable traffic thereby. A representative of the Boston (Mass.) Chamber of Commerce read a prepared statement of the organization registering support of the general rate adjustment sought. While taking no stand on the increases sought, the Chamber asserted that "the advances here sought represent the best judgment of the management of the express companies as to how a portion of their financial problems can best be solved and in the interest of preserving the present high standard of service we bow to their judgment and approve the rate readjustment proposed as a whole."

The representative of a large perfume company, having a national market, asserted that if the reduced charges go into effect, the firm would immediately divert more than 50 per cent of its shipments from other carriers to the Express Agency. While he recognized the superiority of express service to that offered by "any other form of transportation", his company, because of possible savings, is at present using the services of other carriers largely, even though, under this arrangement, it found it necessary to maintain a separate department "whose sole functions are to pacify irate consignees and to attempt, in most cases unsuccessfully, to collect for loss and damage".

Export Grain Rates

The question of reducing rates on shipments of export grain to North Atlantic ports received further consideration this week in the form of a report which A. F. Cleveland, vice president in charge of the Association of American Railroads Traffic Department, made to A. A. R. President J. J. Pelley on September 1's Chicago meeting of eastern railroad traffic officers. As pointed out in last week's issue, the eastern roads abandoned their original proposal in this connection following the adverse finding which came out of the Washington, D. C., meeting of the A. A. R. board of directors on August 26.

Then came the September 1 meeting in Chicago, at which the eastern traffic officers gave further consideration to the idea of some realignment which might enable their roads to compete more effectively been taken, Mr. Pelley said on September with the Lake carriers. No action had 7, although the matter was still being dis-

Prepare to "Fact-find" in Wage Dispute

Preparations for the crisis in the wage dispute, which will occur on October 1 when the proposed 15 per cent reduction in wages automatically becomes effective, have been under way since efforts of the National Mediation Board to bring agreement between the railways and their employees collapsed on August 31, as reported in the *Railway Age* of September 3. Eighteen brotherhoods of the Railway Labor Executives Association, which decided to take a strike vote to determine whether their members want to call a strike when the reduction is made effective, have sent out their ballots and the vote is expected to be completed by September 26. Members of the Brotherhood of Railroad Trainmen earlier in the negotiations gave their general chairman authority to call a strike to prevent a wage reduction.

Until October 1, the present status will be maintained, in accordance with the provisions of the Railway Labor Act, to afford opportunity for a settlement. If a strike should be called on that date, the Mediation Board will then inform the President that an emergency exists and he will appoint a fact-finding committee which is required to report to him within 30 days after its appointment. Anticipating that the employees will vote in favor of a strike and that President Roosevelt will then appoint a fact-finding committee, the Carriers Joint Conference Committee is preparing additional data to be presented to the latter committee.

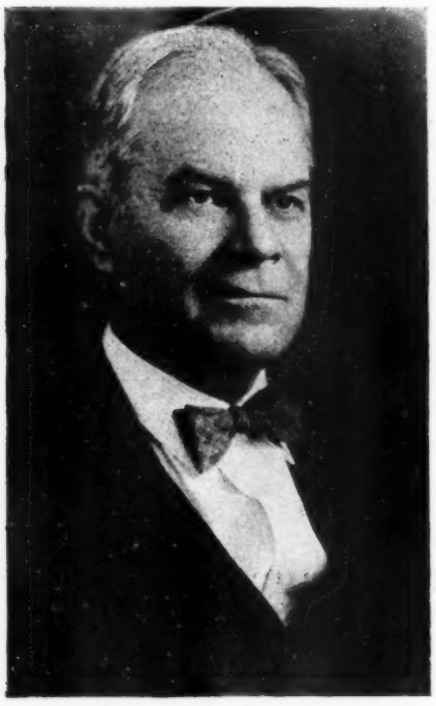
In the meantime, evidence that all is not harmonious within the train service brotherhoods has come to light in an exchange of letters, between the officers of this organization, as noted elsewhere in this issue.

cussed. Later on the same day Mr. Cleveland, together with Vice Presidents G. Shumate, of the Baltimore & Ohio, and W. S. Franklin, of the Pennsylvania, and W. J. Kelly, assistant to Mr. Cleveland, conferred with officials of the Interstate Commerce Commission's Bureau of Traffic on the modus operandi for publishing short-notice tariffs if an adjustment of the export grain rates should be decided upon.

Meanwhile, the Agriculture Department has urged the larger eastern and southern roads to reduce rates on export grains moving from central and western producing areas. In a letter to the carriers, Undersecretary of Agriculture Wilson asked their cooperation in an effort to bring about such reductions. "Our American grain," the letter said, "must meet strong competition in world markets. Your lines can materially assist by authorizing the rate reductions recently considered. These reductions would undoubtedly encourage the movement of additional tonnage."

Bureau of Service Director Dies in Washington

Harvey Boltwood, who has been serving as director of the Interstate Commerce Commission's Bureau of Service since March, 1937, died while enroute to his office at the commission on September 2. Mr. Boltwood took the position vacated by W. P. Bartel when the latter was appointed to the office of secretary of the commission.



(c) Harris & Ewing

Harvey Boltwood

Mr. Boltwood was born in Albany, N. Y., July 6, 1875, and was educated in the public schools there and in Denver, Colo. He attended Colorado College and continued his studies by correspondence. He began his railroad career with the Union Pacific in 1896 as night engine wiper and call boy, and, continuing in mechanical department work on several railroads, filled various positions up to master mechanic. This railroad service was with the Union Pacific, Denver & Gulf, the Colorado & Southern, the Denver & Rio Grande, and the Union Pacific in Colorado and New Mexico. Also, he was for a period connected with the gold mining and milling industry in Colorado, Idaho and Washington.

When the Bureau of Locomotive Boiler Inspection of the Interstate Commerce Commission was organized in 1911 Mr. Boltwood was one of the original 50 district inspectors, and remained with that organization until 1918 when he was transferred to the United States Railroad Administration, Division of Operation, as supervisor of equipment. When the railroads were returned to private operation he was appointed mechanical engineer with the Mechanical Department, Division of Liquidation Claims of the Railroad Administration. In 1923 he returned to the Bureau of Locomotive Inspection, I. C. C., and in April, 1925, was appointed assistant director, Bureau of Service, which position he filled until his appointment as director of the Bureau.

R. R. Supporters to Meet

The first fall meeting of the "Committee on Railroad Support" in New York will be held on September 16, at 7.45 p. m., in Room 1013, 466 Lexington Avenue, New York. After a formative period of six months, the Committee plans to expand by inviting groups logically interested to become members. Among these are officers of banks and insurance companies holding railroad securities; off-line general agents of railroads; economists; advertising agencies handling railroad accounts and newspaper travel editors and solicitors of railroad advertising.

The Committee will discuss, at the current meeting, matters of service, salesmanship and advertising which members observed in their summer travels by rail, and any legislative matters may also be brought up for discussion and joint signature of letters as usual. It also is planned to discuss the current editorials in *Railway Age*, which are attracting widespread employee-attention, because of their defense of the junior employees, to see if a method may not be evolved whereby these may receive the distribution in railroad ranks which the Committee believes is desirable.

Freight Car Loading

Loading of revenue freight for the week ended August 27 totaled 620,511 cars, a new high for the current year. This was an increase of 22,593 cars or 3.8 per cent above the preceding week, but a decrease of 162,965 cars or 20.8 per cent below the corresponding week in 1937 and a decrease of 320,047 cars or 34 per cent below the same week in 1930. All commodity classifications except grain showed increases over the preceding week, and decreases under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, August 27

Districts	1938	1937	1936
Eastern	120,516	152,554	151,445
Allegheny	110,986	155,611	152,041
Pocahontas	46,201	53,416	53,766
Southern	91,650	102,393	102,978
Northwestern	97,993	142,025	121,170
Central Western	105,385	119,094	113,220
Southwestern	47,780	58,383	59,477
Total Western Districts	251,158	319,502	293,867
Total All Roads	620,511	783,476	754,097
Commodities			
Grain and Grain Products	45,389	40,638	36,536
Live Stock	13,787	13,979	15,819
Coal	104,366	128,106	132,163
Coke	4,767	9,762	8,933
Forest Products	30,889	38,243	36,131
Ore	25,517	72,906	55,790
Merchandise l.c.l.	151,000	169,524	167,213
Miscellaneous	244,796	310,318	301,512
August 27	620,511	783,476	754,097
August 20	597,918	777,150	735,476
August 13	589,561	773,782	736,578
August 6	584,050	766,182	728,371
July 30	588,703	779,091	747,529
Cumulative Total, 34 Weeks	18,895,240	25,132,668	22,577,329

In Canada.—Car loadings for the week ended August 27 totaled 53,242, as compared with 47,216 in the preceding week and 57,245 a year ago, according to the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Aug. 27, 1938	53,242	17,713
Aug. 20, 1938	47,216	17,395
Aug. 13, 1938	43,569	17,014
Aug. 28, 1937	57,245	21,791
Cumulative Totals for Canada:		
Aug. 27, 1938	1,495,920	689,481
Aug. 28, 1937	1,646,295	917,216
Aug. 22, 1936	1,502,464	783,934

N. K. P. President Replies in Stock Exchange Mix-up

It was all a mistake, was, in effect, the explanation offered by G. D. Brooke, president of the New York, Chicago & St. Louis (Nickel Plate) in an appearance before the committee on stock list of the New York Stock Exchange on September 7 to answer charges that the road on August 1, announced its intention to pay the September 1 interest due on its Series C refunding bonds, and yet, at a later date, announced its intention to defer the interest payment. In a statement issued to the press, Mr. Brooke laid the blame on a routine error, for which he assumed full responsibility. The statement reads as follows:

"The letter which the treasurer of the railroad sent to the stock exchange on August 1 regarding the September 1 interest was sent without being brought to my attention. It was the same letter which had been sent to the stock exchange by the treasurer's office several times a year for the last 15 years. The purpose was to advise the exchange as to the record date for the payment of interest on registered bonds and as to the place of payment for coupons, but these letters were so worded as also to indicate that the interest would be paid. Under the present circumstances,

the August 1 letter should not have been sent in the usual form, because it was obvious that, as stated in my letter of July 23 announcing the extension plan for the 6 per cent notes, unless the extension plan was successful the road would have to be reorganized under the Bankruptcy law. I expressed to the committee my deep regret at the mistake for which, as president of the road, I take full responsibility. I first became aware of the practice of the treasurer's office of advising the stock exchange in advance of interest payment dates on the day when the ticker carried the statement that the railroad had advised the stock exchange that the interest due September 1 would be paid.

"I immediately took steps to advise the stock exchange that the matter was still uncertain as the board was meeting the following day to consider whether the interest would be paid. The board of directors when faced with the question of paying the interest as indicated by the letter or deferring such payment, had no choice but to do the latter in view of the uncertainties in the situation and the necessity of dealing impartially with all classes of security holders, including particularly the holders of Series A refunding bonds the next installment of interest on which will become due on October 1, and which are secured by the same mortgage as the Series C bonds.

"The approximately $15,000,000. of 6 per cent notes which the holders are now being asked to extend will become due and payable on October 1 and unless the extension plan received sufficient deposits to make it effective, reorganization under Section 77 of the Bankruptcy Act appears inevitable. In these circumstances the board of directors felt that they would not be justified in paying out the nearly $1,350,000 in cash necessary to pay the September 1 interest on the Series C bonds. I expect that, if the extension plan is successful, both the September 1 interest and October 1 interest on the refunding bonds will be paid."

Big Turnout For Transport Clinic

(*Continued from page 385*)

Donald D. Conn, executive vice-president, Transportation Association of America.

John B. Keeler, chairman, Legislative Committee, National Industrial Traffic League.

Charles Donley, president, National Association of Advisory Boards.

Henry E. Stringer, vice-president, Hydraulic-Press Brick Company, Washington, D. C.

Sydney Anderson, vice-president and secretary, General Mills, Inc., Minneapolis, Minn.

E. George Butler, vice-president, John G. Butler Company, Savannah, Ga.

Donald Comer, president, Avondale Mills, Birmingham, Ala.

E. J. Grimes, vice-president, Cargill, Incorporated, Minneapolis, Minn.

Walter A. Frey, chairman, Consolidated Wholesale Grocery Co., Baltimore, Md.

W. J. Williamson, general traffic manager, Sears, Roebuck and Company.

George Houston, Baldwin Locomotive Works, Philadelphia, Pa.

C. J. Abbott, American National Live Stock Association, Hyannis, Nebr.

Emory R. Johnson, Wharton School of Finance & Commerce, University of Pennsylvania.

L. C. Sorrell, Professor of Transportation, University of Chicago.

Robert V. Fleming, president, The Riggs National Bank, Washington, D. C.

Philip A. Benson, president, The Dime Savings Bank, Brooklyn, N. Y.

David H. Howie, vice-president, Fiduciary Trust Company, Boston, Mass.

Edward H. Leslie, chairman, Railroad Securities Committee, Investment Bankers Association of America.

Fairman R. Dick, Dick & Merle-Smith, New York.

James Lee Loomis, president, Connecticut Mutual Life Insurance Co., Hartford, Conn.

James L. Madden, vice-president, Metropolitan Life Insurance Co., New York.

Southeast Board Meeting

Several interesting and timely subjects have been included in the program for the fifty-first regular meeting of the Southeast Shippers Advisory Board at Nashville, Tenn., on September 15. The report of the Executive committee will deal with the railroads' problem, activities of the National Association and the elimination of land grant rates. A summary of the national transportation situation will be made, while reports of commodity and other committees will be presented. Fitzgerald Hall, president of the Nashville, Chattanooga & St. Louis, will address the members, while Sam S. Brewster, commissioner of the department of conservation of Tennessee, will speak on conservation and development of Tennessee's national resources.

Supply Trade

Ralph William Krass has been appointed central station manager of the eastern district for the **Westinghouse Electric & Manufacturing Company.** Since 1919 Mr. Krass has been identified with the Westinghouse central station and marine sales departments at New York. He was appointed, in 1935, manager of the marine division and will continue his duties as manager of that division.

TRADE PUBLICATIONS

THERMIT WELDING.—A 34-page booklet of this title has been published by the Metal & Thermit Corporation, New York, describing and illustrating the history and nature of Thermit welding and of the Thermit reaction; the procedure followed in this process; the physical properties of the welds produced, and the many applications of Thermit welding to various kinds of repair work as well as for the joining of track rails. Included also in the booklet is a description of the various types of special Thermit-made, carbide-free metals and alloys, and also a page devoted to Murex heavy-coated welding electrodes.

BUILT-UP ROOFS.—The Lehon Company, Chicago, has issued a manual on its built-up roofing, comprising 42 detailed specifications covering the use of its different roofing products for various roof pitches and types of deck construction. Each specification is accompanied by drawings which show the manner of applying the roofing materials. The manual also treats of roof insulation in connection with built-up roofs and discusses by text and illustration the proper application of Lehon flashings, edgings, gravel stops, ridges, railing strips and wall gaskets.

Equipment and Supplies

LOCOMOTIVES

THE NEW YORK CENTRAL is asking for bids on September 27 for a number of Diesel-electric switching locomotives, each of 600 hp. This company's plan for securing a $5,000,000 work loan has been approved by the Interstate Commerce Commission; see *Railway Age* of August 13, page 264. The New York Central has returned 3,804 men to work in its various shops.

FREIGHT CARS

THE UNION PACIFIC has entered into a contract with the Pullman-Standard Car Manufacturing Company for the leasing of 50 lightweight steel box cars with an option to purchase.

THE CHIEF OF ENGINEERS, UNITED STATES ARMY, Washington, D. C., has ordered 25 tank cars of 10,000 gal. capacity (50 tons), from the American Car & Foundry Company. An item regarding this equipment was reported in the *Railway Age* of August 20, page 292.

IRON AND STEEL

THE NEW YORK CENTRAL is expected to issue inquiries for 28,600 tons of rails on September 15.

SIGNALING

BOSTON & MAINE.—Bids will be received by H. M. Rainie, purchasing agent of this road at 150 Causeway street, Boston, Mass., until 10:00 a. m. (e.s.t.), September 27, for the furnishing of necessary materials for the installation of flashing light highway crossing signals at Concord, N. H.

THE ATCHISON, TOPEKA & SANTA FE will receive bids at the office of its general purchasing agent, Railway Exchange building, Chicago, until 10 a. m. (c. s. t.), September 26, for the furnishing of material necessary for the installation of highway grade crossing protection at Elida under the federal grade crossing program in the State of New Mexico.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Bids will be received at the office of the assistant chief engineer of this road, Room 898, Union station, Chicago, until 10:00 a. m. (c.s.t.), September 19, for the furnishing of signal material to be used in connection with highway grade crossing protection at five crossings in the State of Illinois. Description of materials and information will be furnished by the superintendent of telegraph and signals, Union depot, Milwaukee, Wis., on request.

BALTIMORE & OHIO.—Bids will be received at the office of the purchasing agent of this road, Charles and Baltimore streets, Baltimore, Md., until 11:00 a. m. (e. s. t.),

October 3, for the furnishing of signal material to be used in connection with the highway grade crossings to be installed under the federal grade crossing program at four locations in the State of Virginia. Bids will also be received until 11 a. m. (e. s. t.), October 4, for the furnishing of signal material to be used in connection with the highway grade crossings to be installed under the federal grade crossing program at eight locations in the State of Illinois.

Construction

ATCHISON, TOPEKA & SANTA FE.—In connection with this road's extensive improvements in its passenger engine and coach terminal at Chicago, a contract has been awarded to Holton, Seelye & Company, Chicago, for the erection of a shop building of steel and concrete construction for making repairs to Diesel engines. This building, which will be 112 ft. by 324 ft., with an annex 53 ft. by 202 ft., will cost approximately $250,000, and will be equipped to overhaul and clean a complete streamlined train in eight hours.

GREAT NORTHERN.—This road plans the immediate expenditure of approximately $200,000 for the construction of a new power plant building 54 ft. by 77 ft. by 47 ft. high, of brick and steel construction, the erection of a new concrete smokestack, and the installation of new boilers, stokers, and auxiliary equipment in this building, and the installation of a direct steaming system for 20 stalls in its round house at the Hillyard shops, Hillyard, Wash. Other work in connection with this improvement will consist of the wrecking of a present steel storage building 46 ft. by 150 ft., the moving of present air compressors to the new building, and some track extensions for coal and ash handling facilities.

PENNSYLVANIA.—Bids for the elimination of grade crossings at Woodbridge, N. J., and incidental work in connection therewith, will be received by this road at Room 265, Pennsylvania station, New York City, until 10:00 a. m. (d. s. t.), September 16. A. C. Watson is chief engineer of the New York zone

SOUTHERN PACIFIC.—A contract has been awarded the Campbell Construction Company, Sacramento, Cal., by the State of California, Department of Public Works, for the construction of an overhead crossing over the tracks of this road at Colfax, Cal. The bridge, which will consist of a steel girder and reinforced concrete deck structure 504.4 ft. long on concrete piers and abutments with pile foundations, will cost approximately $138,604.

THE SEABOARD AIR LINE is building two oil fueling stations at Hamlet, N. C., and Wildwood, Fla., respectively, for the purpose of serving nine new Diesel-electric units recently ordered.

Financial

AMADOR CENTRAL.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon its line between Ione, Calif., and Martell, approximately 12 miles.

CHICAGO, ATTICA & SOUTHERN.—*R. F. C. Loan.*—The receiver for this road has applied for Interstate Commerce Commission approval of a $50,000 loan which it is seeking from the Reconstruction Finance Corporation. The applicant would have the loan run for three years by which time it hopes "to reorganize or refinance its business." Proceeds would be used for taxes and accounts and notes payable.

CHICAGO GREAT WESTERN.—*Reorganization.*—The committee representing holders of Chicago Great Western first mortgage 4s of 1959, in a letter being sent to bondholders, states that support will be given to the plan of reorganization approved by the Interstate Commerce Commission on August 16, and reported in the *Railway Age* of August 20. The issue represented by this committee, of which $35,544,000 principal amount is outstanding, is the only large bond issue of the present company. Support of the plan by the major group of bondholders is believed to be an important step in consummation of the Great Western plan.

CLINTON, DAVENPORT & MUSCATINE. —*Abandonment.* — Examiner R. Romero of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it authorize this company to abandon a line extending from Davenport, Iowa, to Muscatine, 27.3 miles.

DELAWARE, LACKAWANNA & WESTERN. —*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon its Pancoast branch, extending from a point near Storrs Junction in the borough of Olyphant, Pa., to the Pancoast Colliery in the borough of Throop.

DENVER & RIO GRANDE WESTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon the so-called Reliance branch extending from Reliance Junction, Colo., to Ojo, 5.4 miles.

ILLINOIS CENTRAL.—*Director Dies.*—Jerome J. Hanauer, Greenburgh, N. Y., director of the Illinois Central, died suddenly at Murray Bay, Que., September 3.

MISSOURI PACIFIC.—*Operation Under Trackage Rights.*—The trustees have asked the Interstate Commerce Commission for authority to operate under trackage rights over the Municipal Bridge between St. Louis, Mo., and East St. Louis, Ill., and over certain track of the Terminal Railroad Association of St. Louis, 5.6 miles.

BALTIMORE & OHIO.—*Plan for modification of interest charges and maturities.*—This road has filed with the Interstate Commerce Commission a plan for modification of interest charges and maturities which, if effective, will reduce the annual fixed interest of the company and its operated subsidiaries from $31,421,742 to $19,644,679 and place $11,376,435 of present fixed interest on a contingent basis, payable, in the order stated in the plan, if earned, after deducting, in each year, not more than 2½ per cent of total operating revenues as a capital fund for additions and betterments. This contingent interest will, however, be fully cumulative and must be paid before dividends and at or before maturity of the respective issues. A substantial part of the surplus earnings of the road will be applied to a sinking fund.

A letter written to security holders by Daniel Willard, president of the road, points out that the company faces maturities of approximately $185,000,000 during the next four years and that, in addition to modifications of interest, suitable provision must be made for these approaching maturities. Provisions of the plan regarding extension of maturity dates of principal issues are as follows: (1) Baltimore & Ohio, Pittsburgh, Lake Erie & West Virginia 4 per cent bonds, due November 1, 1941, $43,182,000 principal amount, to be extended at the same rate of interest for a period of ten years, with maturity at November 1, 1951, interest to continue to be a fixed charge in full; (2) Baltimore & Ohio 5-year 4½ per cent secured notes, due August 1, 1939, $50,000,000 outstanding, to be extended for five years, with maturity at August 1, 1944, interest to continue at 4½ per cent until August 1, 1939, and thereafter at a rate of 4 per cent, in each case as a fixed charge; (3) R. F. C. notes bearing interest at 4 per cent and maturing at various dates, aggregating $72,771,578 as of August 15, 1938, will be extended at the same rate of interest so as to mature five years after the effective date of the plan, but the company reserves the privilege of prepayment in whole or in part at any time; (4) Holders of Baltimore & Ohio refunding and general mortgage bonds becoming bound by the plan will consent to modification of the terms of the refunding and general mortgage so that the company may at any time extend (a) any bonds which underlie the refunding and general mortgage and which mature before January 1, 1947; and (b) with the consent of holders of 66⅔ per cent in principal amount of the refunding mortgage bonds, any other bonds which underlie the mortgage. In consideration of their acceptance of the plan such holders will be given an option to convert bonds to common stock on the basis of $100 a share.

The interest adjustments provided by the plan are summarized in the accompanying table. Modification of certain bonds are also proposed for three operated subsidiaries of the company—the Buffalo, Rochester & Pittsburgh, the Buffalo & Susquehanna and the Cincinnati, Indianapolis & Western,—the properties of which are at present operated by the Baltimore & Ohio under operating agreements terminable on 60 days' notice. The plan may be carried out as to the Baltimore & Ohio whether or not it is carried out as to any or all of these subsidiaries and may be applied to any of the subsidiaries even if not carried out as to all. The plan provides for the

following extension of maturity dates: (1) Holders of Buffalo, Rochester & Pittsburgh consolidated mortgage bonds bound by the plan will consent to an extension of any bonds underlying the consolidated mortgage; (2) Lincoln Park & Charlotte first mortgage 5 per cent bonds, due January 1, 1939, $350,000 outstanding, will be extended for a period of ten years, at the same rate of interest, to January 1, 1949. Modifications applying to securities of operated subsidiaries, while in effect, will reduce the aggregate fixed interest charges on funded debt of these subsidiaries from $2,133,059 to $1,472,221, leaving $510,210 a year of contingent interest charges. The Baltimore & Ohio will become liable for such charges of any of the subsidiaries covered by the plan. The Alton, a separately-operated property, is not included in the plan.

In his letter to the security holders, Mr. Willard made it clear that bond holders are not now asked to take action on the plan. No deposits or assents will be requested or accepted until after action by the Interstate Commerce Commission. The letter states that the plan is offered in the belief "that such adjustments brought about by voluntary agreement between security holders and the company will be less expensive, simpler and more satisfactory than a re-organization effected through customary legal proceedings." It is further declared that support of the plan by substantial majorities of the security holders would go far to insure the prompt attainment of the purposes in view, "even though it might finally become necessary to invoke legal proceedings to make the plan fully effective."

NEW YORK CENTRAL.—*Pledging of Bonds.*—This company has asked the Interstate Commerce Commission for authority to pledge $600,000 of its refunding and improvement mortgage five per cent bonds, series C, with the Hartford Accident & Indemnity Co., as additional collateral security under a collateral agreement with that company for the furnishing of certain bonds, undertakings and other instruments obligatory in nature. The agreement provides that the market value of the pledged collateral shall at all times equal at least 130 per cent of the total amount of the bonds, and the collateral has now fallen below that percentage. According to the application, the new pledge will raise the amount to 130 per cent.

NEW YORK, NEW HAVEN & HARTFORD.—*Ratification of Trustees of the Boston & Providence.*—Charles W. Mulcahy and Bentley W. Warren, both attorneys of Boston, Mass., have asked the Interstate Commerce Commission to ratify their appointments as co-trustees of the Boston & Providence in reorganization proceedings under Section 77 of the Bankruptcy Act.

NEW YORK, CHICAGO & ST. LOUIS.—*Deposit of Notes.*—The time for deposit of New York, Chicago & St. Louis 3 year 6 per cent notes aggregating $15,000,000 has been extended to September 15. The notes mature October 1 and agreement to the extension for three years had been asked by August 31. In a letter to security holders urging deposit of the notes, George D. Brooke, president, stated, "The fate of the company depends upon immediate action of the bondholders of the undeposited notes. While a substantial majority of the notes have been deposited, the plan will fail unless holders of undeposited notes take immediate action. Failure of the plan will necessitate a reorganization under the provisions of section 77 of the bankruptcy act."

WESTERN PACIFIC.—*Certificates of Indebtedness.*—This road has applied to the Interstate Commerce Commission for authority to issue trustees' certificates of indebtedness in the amount of $10,000,000 to discharge a like amount of certificates which become due December 31.

TEXAS MEXICAN.—*Equipment Trust Certificates.*—This road has applied for Interstate Commerce Commission approval of a plan whereby it would issue $200,000 of equipment trust certificates to the Reconstruction Finance Corporation for the purpose of financing in part the purchase of seven Diesel-electric locomotives from the Baldwin Locomotive Works. The R. F. C. would set the interest rate on the certificates, which would be paid off $25,000 a year, with the privilege of anticipating payments.

Average Prices of Stocks and Bonds

	Sept. 6	Last week	Last year
Average price of 20 representative railway stocks..	27.75	28.18	42.92
Average price of 20 representative railway bonds..	59.19	59.79	76.81

Schedule of Interest Provided by B. & O. Plan

Issues		Present Interest Rate P. C.	Principal Amount Outstanding	Present Annual Interest Charges	Proposed Revision of Interest Charges—Fixed Rate P. C.	Fixed Amount	Contingent Rate P. C.	Contingent Amount
Funded debt of the Baltimore & Ohio:								
B. & O.	First Mort.	4	$81,994,850	$3,279,794	4	$3,279,794		.....
B. & O.	First Mort.	5	75,000,000	3,750,000	4	3,000,000	1	$750,000
B. & O.	Southwestern Div.	5	45,000,000	2,250,000	3½	1,575,000	1½	675,000
B. & O.	P., L. E. & W. V.	4	43,182,000	1,727,280	4	1,727,280		.....
C. T. & V.	First Mort.	4	3,301,000	132,040	4	132,040		.....
W. Va. & P.	First Mort.	4	3,525,000	141,000	4	141,000		.....
W. Va. & P.	First Mort.	4	456,000	18,240	4	18,240		.....
O. & L. K.	First Mort.	5	228,000	11,400	5	11,400		.....
B. & O.	Toledo-Cin. Div.	4	10,985,200	439,408	4	439,408		.....
C. H. & D.	General Mort.	5	3,000,000	150,000	5	150,000		.....
C. H. & D.	First & Refunding	4	10,000	400	4	400		.....
P. & T. Br.	First Mort.	4	7,000	280	4	280		.....
D. & M.	Guar. Pfd. stock	8	1,211,250	96,900	8	96,900		.....
D. & M.	Guar. Com. stock	3½	2,396,950	83,893	3½	83,893		.....
Home Ave.	Guar. stock	5	99,350	4,967	5	4,967		.....
B. & O.	Equip. obligations	3½-5	21,960,000	860,325		860,325		.....
B. & O.	5-yr. Secured Notes	4½	50,000,000	2,250,000	4	2,000,000		.....
B. & O.	R. F. C. loans	4	69,816,578	2,792,663	4	2,792,663		.....
B. & O.	P. W. A. loan	4	2,955,000	118,200	4	118,200		.....
B. & O.	P. W. A. Equip. loan	4	1,424,000	56,960	4	56,960		.....
B. & O.	Refund. & Gen. Series "A"	5	60,000,000	3,000,000	1	600,000	4	2,400,000
B. & O.	Refund. & Gen. Series "C"	6	35,000,000	2,100,000	1½	420,000	4½	1,680,000
B. & O.	Refund. & Gen. Series "D"	5	30,000,000	1,500,000	1	300,000	4	1,200,000
B. & O.	Refund. & Gen. Series "F"	5	33,120,750	1,656,038	1	331,208	4	1,324,830
B. & O.	30-yr. Convert. bonds	4½	63,031,000	2,836,395		.....	4½	2,836,395
B. & O. C. T.	Real Estate Mort.	5	650,000	32,500	5	32,500		.....
Total funded debt of the B. & O.			$638,353,928	$29,288,683		$18,172,458		$10,866,225
Funded debt of operated subsidiaries not assumed by B. & O.:								
B. R. & P.	Consol. Mort.	4½	$29,114,000	$1,310,130	3	$873,420	1½	$436,710
L. P. & C.	First Mort.	5	350,000	17,500	5	17,500		.....
A. & W.	First Mort.	4	2,000,000	80,000	4	80,000		.....
A. & W.	Guar. stock	6	3,193,300	191,598	6	191,598		.....
C. & M.	First Mort.	5	650,000	32,500	5	32,500		.....
C. & M.	Guar. stock	6	899,350	53,961	6	53,961		.....
Total B. R. & P.			$36,206,650	$1,685,689		$1,248,979		$436,710
B. & S. R. R.	First Mort.	4	2,824,800	112,992	4	112,992		.....
B. & S. R. R.	First Mort.	4	3,765,700	150,628		.....		.....
C. I. & W.	First Mort.	5	3,675,000	183,750	3	110,250	2	73,500
Total unassumed funded debt of operated subsidiaries			$46,472,150	$2,133,059		$1,472,221		$510,210
Grand Total			$684,826,078	$31,421,742		$19,644,679		$11,376,435

Railway Officers

EXECUTIVE

J. E. Skaggs, former president of the Southeastern Express Company, has been appointed assistant to vice-president of the Railway Express Agency, with headquarters at Atlanta, Ga.

FINANCIAL, LEGAL AND ACCOUNTING

B. A. Beck, assistant secretary and secretary of the board of pensions of the Illinois Central, at Chicago, retired effective August 31.

John H. Mooers, general attorney of the Railway Express Agency, has been appointed general solicitor in the law department at New York, succeeding **Albert M. Hartung,** who was recently appointed vice-president in charge of personnel, as reported in the *Railway Age* of August 6. **C. C. Evans,** attorney for the New York City department, has been appointed general attorney, to succeed Mr. Mooers.

F. W. Woods, former secretary and treasurer of the Southeastern Express Company, has been appointed assistant treasurer of the Railway Express Agency, at Atlanta, Ga.

OPERATING

Berkeley Mills, general agent, traffic and transportation departments of the Virginian, at Beckley, W. Va., has been appointed assistant trainmaster of the New River division, with headquarters at Mullens, W. Va.

A. J. Elder, superintendent of the Dubuque—Illinois division of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Savanna, Ill., is promoted, effective September 16, to general superintendent of the Milwaukee, with headquarters at Milwaukee, Wis., succeeding **P. H. Nee,** whose death on August 24, was reported in the *Railway Age* of August 27.

H. B. Magill, superintendent of the Georgia division of the Railway Express Agency, at Atlanta, Ga., has been appointed superintendent of the new Piedmont division, with headquarters at Charlotte, N. C. **J. J. West,** former superintendent of the Southeastern Express Company at Birmingham, Ala., has been appointed superintendent of the Georgia division of the R. E. A., at Atlanta.

Charles W. Philhour, trainmaster of the Chicago terminals of the Atchison, Topeka & Santa Fe, has been promoted to superintendent of the Chicago terminals, with the same headquarters, succeeding **C. A. Gordon,** who retired September 1. Mr. Philhour was born at Sprague, Wash., on April 25, 1891, and entered railway service in 1905 as a call-boy on the Santa Fe at La Junta, Col. After serving in various capacities, including stenographer, trainmasters clerk, brakeman, and claim clerk and secretary, he was promoted to trainmaster of the New Mexico division on May 1, 1927, and in April, 1930, he

Charles W. Philhour

was appointed transportation inspector at Dodge City, Kan. In May, 1933, he was appointed night yardmaster at Dodge City, and on December 1, 1934 he was advanced to general yardmaster at Hutchinson, Kan. Mr. Philhour was promoted to assistant to the general superintendent of transportation at Chicago on July 1, 1936, and on July 15 of this year, was advanced to trainmaster of the Chicago terminals, the position he held at the time of his recent promotion.

TRAFFIC

Hoyt D. Sweetin has been appointed general agent, St. Louis-San Francisco, with headquarters at Little Rock, Ark., effective September 16.

C. B. Williams, former traffic manager of the Southeastern Express Company, has been appointed Southern traffic manager of the Railway Express Agency, with headquarters at Atlanta, Ga.

William Jardine has been appointed district freight agent of the Southern, with headquarters at Washington, D. C., succeeding **Howell Peeples,** who has retired after 53 years of service. **V. L. Stern** has been appointed freight traffic agent, with headquarters at New York, succeeding **T. R. Ramspeck.**

H. B. Light, general freight agent of the Reading, at Philadelphia, Pa., has been appointed general coal freight agent there, to succeed **R. D. Heusner,** whose death on June 29 was reported in the *Railway Age* of July 2. **T. P. Refbord,** agent at Wilmington, Del., has been appointed assistant general freight agent, at Philadelphia, and **B. C. Cassel** has been appointed coal freight agent there.

H. G. Heiser has been appointed general agent, freight department, New York Central system, with headquarters at Portland, Ore., to succeed **A. J. Lacombe,** who has been transferred in the same capacity to Los Angeles, Cal., succeeding **J. G. Graham,** resigned. **J. R. Teasdale** has been appointed general agent, freight department, at St. Paul, Minn., to succeed **George Munro,** who has been retired under pension regulations.

L. Emerson Wetterau, whose promotion to assistant freight traffic manager of the Southern, with headquarters at Birmingham, Ala., was announced in the *Railway Age* of August 27, was born at Tamaqua, Pa., on October 2, 1894, and was graduated from Girard College, Philadelphia, Pa. He entered railway service in November, 1910, with the Southern and served successively in various capacities in the freight traffic department at Richmond, Va., Norfolk, Va., Chattanooga, Tenn., New York, and Lynchburg, Va. In the spring of 1934, Mr. Wetterau was promoted to assistant general freight agent, with headquarters at Knoxville, Tenn., and in August, 1937, he was appointed assistant traffic manager at New Orleans, La., the position he held at the time of his recent promotion.

Carl W. Evers, whose promotion to general freight agent of the Union Pacific, with headquarters at Omaha, Neb., was announced in the *Railway Age* of September 3, was born at Council Bluffs, Iowa, on March 4, 1896, and entered railway service in July, 1914, as a clerk-stenographer in the operating department of the Union Pacific at Council Bluffs. In September, 1916, he went to the Grand Trunk as chief clerk to the commercial agent at Omaha, but returned to the Union Pacific as secretary to the superintendent of transportation in April, 1917. During the war he served with the U. S. Army, but returned in August, 1919, as secretary to the

Carl W. Evers

assistant general freight agent at Omaha. In March, 1920, he was promoted to secretary to the passenger traffic manager, and in November, 1922, he was appointed secretary to the assistant to the vice-president. In October, 1923, he was promoted to assistant chief clerk in the traffic department, and on February 1, 1927, he was appointed traveling freight agent at Sioux City, Iowa. On December 31, 1927, he was advanced to general agent at that point, and on November 15, 1935, he was transferred to Omaha, where he served as general agent in the freight department. Mr. Evers was promoted to assistant general freight agent on August 20 of this

Continued on next left-hand page

year, and five days later was advanced to general freight agent.

ENGINEERING AND SIGNALING

M. M. Backus, assistant engineer maintenance of way of the Illinois Central, with headquarters at Chicago, has been appointed assistant chief engineer maintenance of way with the same headquarters.

C. H. English, superintendent telegraph and telephone of the Central of New Jersey, at Jersey City, N. J., has been retired after 54 years of service. The jurisdiction of **L. D. Shearer,** superintendent telegraph of the Reading, has been extended to include the Central of New Jersey, with headquarters at Reading, Pa.

John A. MacKenzie, division engineer of the Trenton division of the Canadian Pacific, with headquarters at Toronto, Ont., has been promoted to assistant engineer maintenance of way of the Eastern lines, with the same headquarters, to succeed **Nelson E. Gutelius,** whose death was reported in the *Railway Age* of August 13.

W. J. Strout, superintendent of bridges and buildings of the Bangor & Aroostook, with headquarters at Houlton, Me., has been appointed assistant engineer in the chief engineer's office at Houlton. **J. W. Wiggins** has been appointed acting superintendent of bridges and buildings, succeeding Mr. Strout.

J. J. Richardson, assistant engineer in the maintenance of way department, eastern lines, Canadian Pacific, with headquarters at Toronto, Ont., has been appointed division engineer of the Trenton division, at Toronto, to succeed **J. A. MacKenzie. W. R. Benny,** transitman at Smiths Falls, has been appointed assistant engineer in the maintenance of way department, eastern lines, at Toronto.

PURCHASES AND STORES

The Mexican Government Railway System has moved its New York office from 25 Broad street to 120 Wall street. **S. V. Gonzalez** is material agent.

N. L. MacNeil has been appointed stationery storekeeper, with headquarters at Moncton, N. B., succeeding **T. A. Gauvin,** who has retired after more than 47 years of service.

MECHANICAL

H. F. Finnemore, assistant electrical engineer of the Canadian National, with headquarters at Montreal, has been appointed electrical engineer.

J. R. Frohoff, district road foreman of engines on the Union Pacific, with headquarters at Junction City, Kan., has been promoted to master mechanic at Kansas City, Mo., succeeding **G. R. Wilcox,** who has been given an extended leave of absence on account of ill-health.

Albert Sutherby, master mechanic on the Western district of the Erie, with headquarters at Cleveland, Ohio, has retired effective September 1, and the position of master mechanic at Cleveland has been abolished. The jurisdiction of **C. J. Gerbes,** master mechanic at Marion, Ohio, has been extended to include Youngstown, Ohio and Cleveland, and that of **T. F. Gorman,** master mechanic at Meadville, Pa., to include Akron, Ohio, and Kent.

SPECIAL

Timothy T. Keliher, whose retirement as chief special agent of the Illinois Central was announced in the *Railway Age* of September 3, was born in Williamsport, Pa., but lived during his boyhood at North Platte, Neb. He attended a commercial college in St. Joseph, Mo., and after serving as a boiler maker and machinist apprentice, and studying law for two years, he entered politics and served as sheriff of Lincoln County, Nebraska, for eight years. The record he established as sheriff resulted in his appointment in 1902 as special agent on the outlaw-infested Wyoming division of the Union Pacific where he gained a national reputation as a law enforcement officer. In 1910, he went with the Illinois Central as chief special agent, and continued in that position for 28 years.

OBITUARY

Walter J. Grant, general merchandise agent of the Boston & Maine, with headquarters at Boston, Mass., died suddenly on August 26, at the age of 40 years.

L. B. Lincoln, principal assistant engineer of the Bangor & Aroostook, with headquarters at Houlton, Me., died in that city on August 18.

Rollin Henry Wilbur, retired vice-president and general manager of the Lehigh & New England, with headquarters at Philadelphia, Pa., died on September 6 at Bryn Mawr hospital, Pennsylvania, at the age of 75 years. Suffering from a stomach ailment on the Il de France on

Rollin Henry Wilbur

his return from Europe, he was rushed from the ship in New York to the hospital. Mr. Wilbur retired on November 1, 1937, after 50 years of railroad service, which began in 1884 as clerk in the office of the general superintendent of the Lehigh Valley at South Bethlehem, Pa. He was born at Bethlehem, Pa., on September 3, 1863, and was educated at Mt. Pleasant Military Academy, Ossining, N. Y., and Lehigh University, Bethlehem. From 1886 to 1888, Col. Wilbur served as assistant to general superintendent of the Lehigh Valley and from 1888 to 1892 as assistant to vice-president. From April to September, 1892, he served as assistant to the general manager of the Philadelphia & Reading and for the next year as assistant to vice-president, then becoming general division superintendent. He was general division superintendent of the Lehigh Valley from 1893 to 1894; general superintendent from 1894 to 1903 and general manager from 1903 to 1904. Col. Wilbur became vice-president and general manager of the Lehigh & New England in October, 1907, the position he held until his retirement. He served two terms, expiring April, 1904, on the executive committee of the American Railway Association.

Merle F. Harden, comptroller of the Central of Georgia, with headquarters at Savannah, Ga., died suddenly on August

Merle F. Harden

16, after a heart attack. Mr. Harden was born on September 20, 1879, at Ohio Pyle, Pa., and started his railroad career in June, 1896, as a clerk in the car accountant's office of the Southern at Washington, D. C., later going to Greenville, S. C., where he worked as a call boy for the same railroad. He entered the service of the Central of Georgia in 1906 as station accountant and from 1907 to April, 1912, Mr. Harden was with the Atlanta & West Point and the Illinois Central. He returned to the Central of Georgia in April, 1912, as a traveling auditor, with headquarters at Savannah; shortly thereafter he was appointed chief traveling auditor. In 1915 Mr. Harden was appointed chief clerk to the comptroller, and later in that year became cost accountant. On July 1, 1917, he was appointed auditor of disbursements. During federal operation he served as comptroller, and on March 1, 1920, was appointed auditor. On September 1, 1931, Mr. Harden was promoted to comptroller, the position he held until his death.

Tables of Revenues and Expenses begin on next left-hand page

Photograph—courtesy Union Pacific R.R.

Outstanding Results with FRANKLIN AUTOMATIC COMPENSATOR AND SNUBBER on Union Pacific Locomotives

The Franklin Automatic Compensator and Snubber on 20 Union Pacific roller-bearing passenger locomotives has maintained a perfect fit between the driving boxes and the frames, automatically compensating for expansion and wear, and producing the following outstanding results:

1. Utilization — Monthly mileage 14,000 to 16,000.
2. Tire Mileage — Average 104,000 miles — Maximum 133,000.
3. Tire Condition — Uniformly round — No evidence of quarter slip.
4. Rod Bushings — Unusually long wear and minimum out-of-round.
5. No binders nor wheels dropped to adjust pedestal fits.
6. No work on Compensator and Snubber except periodic adjustment.
7. Compensators and Snubbers reapplied after tire turning with original parts — No repairs or replacements required.

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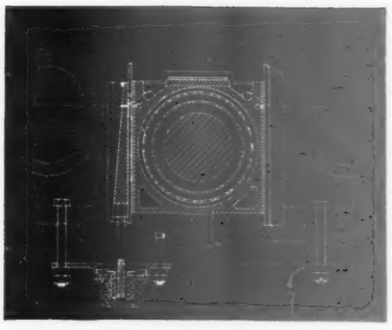

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1938

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: 1938	1937
Akron, Canton & Youngstown	July	171	$129,907	$51	$133,483	$21,400	$13,997	$11,768	$47,019	$102,821	77.0	$30,662	$18,225	$8,242	$23,449
	7 mos.	171	842,051	276	875,037	154,730	89,627	80,374	338,019	730,217	83.4	144,820	54,472	—38,425	216,260
Alton	July	957	1,167,528	212,809	1,555,799	207,327	193,998	41,649	569,267	1,078,797	69.3	477,002	394,593	189,653	152,446
	7 mos.	957	6,096,397	1,429,741	8,688,883	1,111,082	1,351,030	316,682	3,771,012	7,030,605	80.9	1,658,278	1,000,451	—203,189	561,157
Atchison, Topeka & Santa Fe System	July	13,500	14,062,217	1,841,256	16,906,929	1,722,760	2,573,759	441,736	5,044,281	10,144,344	60.0	6,762,585	5,489,448	5,232,200	4,558,941
	7 mos.	13,510	68,580,694	9,692,099	85,412,499	10,276,578	19,056,049	3,141,164	33,400,473	68,526,022	80.2	16,886,477	8,427,486	7,474,501	13,514,037
Atlanta & West Point	July	93	100,958	29,275	148,439	16,388	26,043	8,095	65,210	125,622	84.6	22,817	12,926	—1,594	—6,090
	7 mos.	93	610,683	168,680	924,376	128,614	178,334	56,423	447,743	885,260	95.8	39,116	—30,192	—126,223	—4,855
Western of Alabama	July	133	86,049	29,071	129,458	18,937	27,208	7,759	53,463	115,772	89.4	13,686	297	2,710	485
	7 mos.	133	614,805	168,806	900,816	133,240	203,205	54,306	376,764	834,760	92.7	66,056	—28,397	—9,649	65,819
Atlanta, Birmingham & Coast	July	639	270,212	7,613	300,650	44,258	54,261	24,750	109,252	255,709	85.1	44,941	20,692	2,004	367
	7 mos.	639	1,620,546	148,003	1,958,816	301,007	357,011	167,641	806,285	1,807,909	92.3	150,907	—21,365	—195,448	18,561
Atlantic Coast Line	July	5,106	1,856,136	347,147	2,444,976	407,838	690,126	132,436	1,251,056	2,603,778	106.5	—158,802	—358,802	—389,964	18,364
	7 mos.	5,105	19,474,482	5,138,733	27,298,479	3,105,163	4,742,495	1,048,417	11,005,061	21,173,287	77.6	6,125,192	3,000,192	1,640,080	3,917,809
Charleston & Western Carolina	July	343	173,539	1,655	178,632	25,390	31,344	7,515	61,139	131,608	73.7	47,024	30,024	31,468	55,858
	7 mos.	343	1,240,080	8,540	1,278,341	180,226	235,390	55,758	468,569	982,545	76.9	295,796	158,796	137,605	349,520
Baltimore & Ohio	July	6,434	9,722,324	970,144	11,325,313	933,512	2,166,033	373,284	4,206,738	8,210,027	72.5	3,115,286	2,276,726	1,850,142	1,933,438
	7 mos.	6,440	61,879,579	6,182,120	72,937,454	6,656,821	16,368,027	2,608,282	30,351,170	59,770,639	82.0	13,166,815	6,929,727	4,364,462	15,697,298
Staten Island Rapid Transit	July	24	43,894	90,079	145,916	11,291	18,927	994	82,604	124,614	85.4	21,302	—6,974	—11,406	—32,105
	7 mos.	24	340,484	492,925	899,310	67,236	135,365	7,867	575,381	860,871	95.7	38,439	—160,820	—199,330	—201,760
Bangor & Aroostook	July	603	230,859	15,997	264,226	114,113	84,552	5,359	104,341	334,466	126.6	—70,240	—87,737	—68,793	13,114
	7 mos.	603	3,679,789	120,204	3,922,838	770,845	629,332	40,127	994,769	2,620,488	66.8	1,302,350	900,007	854,790	1,115,867
Bessemer & Lake Erie	July	225	843,622	797	855,257	130,255	179,871	11,451	178,519	530,702	62.1	324,555	242,936	251,908	1,252,907
	7 mos.	225	3,368,640	4,543	3,440,238	553,318	1,351,398	82,255	974,624	3,182,098	92.5	258,140	—121,386	—18,798	4,840,078
Boston & Maine	July	1,955	2,151,659	687,195	3,277,571	389,991	399,674	68,128	1,412,750	2,425,197	74.0	852,374	539,377	353,086	484,983
	7 mos.	1,959	15,451,715	4,041,240	22,615,547	3,094,890	3,471,148	452,825	10,089,096	18,219,927	80.6	4,395,620	2,212,058	858,311	4,387,718
Burlington, Rock Island	July	255	116,514	20,863	144,900	18,874	20,794	4,576	51,531	105,587	72.9	39,313	31,143	18,425	13,465
	7 mos.	255	656,116	127,998	835,816	139,729	144,075	34,677	364,714	751,883	90.0	83,933	30,258	—43,696	—35,527
Cambria & Indiana	July	37	83,855	.....	83,961	7,682	38,520	405	8,218	61,873	73.69	22,088	—464	57,598	61,529
	7 mos.	37	626,629	.....	627,331	62,806	308,365	2,891	65,125	482,805	76.96	144,526	—2,168	397,832	554,374
Canadian Pacific Lines in Maine	July	234	75,113	18,358	106,760	36,997	24,984	10,129	47,736	128,317	120.2	—21,557	—31,257	—44,137	—47,178
	7 mos.	234	1,338,922	99,005	1,525,872	291,331	302,853	70,013	555,170	1,280,096	83.9	245,776	171,648	11,059	80,856
Canadian Pacific Lines in Vermont	July	91	44,533	11,842	66,871	14,169	20,621	4,523	55,993	100,850	150.8	—33,979	—41,381	—60,402	—37,268
	7 mos.	91	325,400	61,226	458,506	105,399	162,508	30,909	411,809	750,834	163.8	—292,328	—341,679	—475,072	—278,079
Central of Georgia	July	1,926	963,547	111,952	1,173,939	163,003	238,205	51,420	526,825	1,053,439	89.7	120,500	9,934	—15,697	60,938
	7 mos.	1,926	6,710,660	755,204	8,483,820	1,153,836	1,684,883	374,085	3,910,412	7,673,601	90.5	810,219	27,509	—161,754	858,423
Central of New Jersey	July	710	1,697,596	464,696	2,342,086	164,007	418,398	55,657	1,064,671	1,806,133	77.1	535,953	135,981	—5,984	124,941
	7 mos.	709	12,852,059	2,538,566	16,537,238	949,198	2,744,128	345,496	7,610,096	12,291,557	74.3	4,245,681	1,482,179	440,998	1,700,448
Central Vermont	July	430	334,336	46,798	426,472	98,353	67,664	13,254	203,439	402,823	94.5	23,649	—7,365	—27,997	50,935
	7 mos.	430	2,253,689	245,404	2,769,709	523,861	487,354	89,021	1,473,956	2,716,328	98.1	53,381	—136,276	—382,444	282,202
Chesapeake & Ohio	July	3,102	8,107,484	266,330	8,715,416	871,257	1,506,939	194,400	2,199,341	5,060,981	58.1	3,654,435	2,560,441	2,519,105	3,738,302
	7 mos.	3,102	51,613,627	1,804,965	55,488,800	6,358,702	11,240,135	1,396,340	15,254,231	36,362,932	65.5	19,125,868	12,809,141	12,466,014	23,669,123
Chicago & Eastern Illinois	July	927	870,680	119,605	1,111,032	138,943	160,946	52,064	465,347	882,796	79.5	228,236	149,236	46,341	28,507
	7 mos.	927	6,162,409	827,361	7,912,627	1,001,639	1,327,205	386,306	3,418,048	6,591,440	83.3	1,321,187	768,187	—106,758	646,789
Chicago & Illinois Midland	July	131	294,725	1,001	311,102	36,177	64,699	19,402	78,079	215,548	69.3	95,554	73,415	59,761	69,221
	7 mos.	131	1,898,390	6,693	1,960,759	199,255	429,594	134,624	549,315	1,436,400	73.3	524,359	372,059	350,946	534,906
Chicago & North Western	July	8,391	5,229,314	1,192,597	7,080,358	1,374,142	1,282,454	213,865	2,816,763	6,001,441	84.8	1,078,917	463,912	231,106	—304,982
	7 mos.	8,391	32,310,981	6,483,429	43,441,607	7,149,364	10,448,073	1,343,686	19,725,769	40,827,913	94.0	2,613,694	—1,855,340	—3,232,574	—1,312,810
Chicago, Burlington & Quincy	July	8,970	7,731,161	991,688	9,512,828	1,190,580	1,243,000	253,162	2,907,690	5,906,601	62.1	3,606,227	3,028,993	2,547,105	1,648,403
	7 mos.	8,970	39,203,725	5,091,627	49,741,330	6,295,627	9,067,855	1,737,971	19,182,529	38,365,629	77.1	11,375,701	6,405,628	3,709,370	6,406,309
Chicago Great Western	July	1,505	1,269,247	47,293	1,410,754	212,350	222,425	56,606	541,473	1,082,858	76.7	327,896	235,220	61,736	107,936
	7 mos.	1,505	8,377,954	274,724	9,292,824	1,495,372	1,649,584	393,044	3,920,930	7,818,511	84.1	1,474,313	838,679	—385,120	253,892
Chicago, Indianapolis & Louisville	July	549	566,248	44,887	667,897	78,721	137,125	26,952	289,837	565,494	84.7	102,403	65,042	16,976	—26,444
	7 mos.	549	3,788,933	329,434	4,543,845	487,517	1,037,561	204,373	2,087,791	4,080,002	89.8	463,843	171,371	—472,592	152,871

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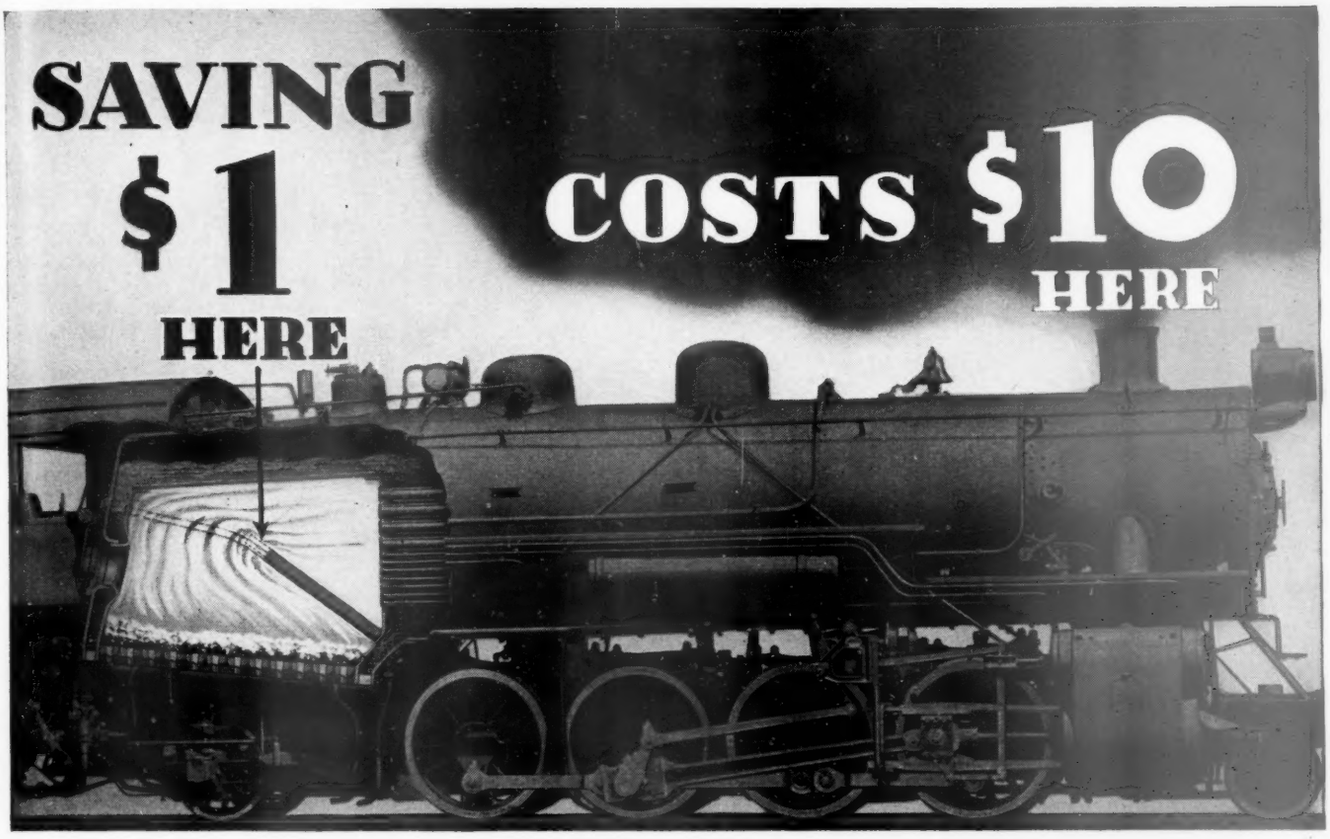

. . a shortened arch falls short of full economy

SCRUTINIZE every dollar of expenditure today. But do it thoroughly, considering the inter-relating effect on other items, to determine the net economy.

Paring down on Arch Brick only means buying more fuel. Here is one false economy that means a net loss to the railroad.

Now, when economy is needed so sorely, don't handicap the effectiveness of the Arch by skimping on Arch Brick.

Any reduction in the number of courses of the Arch wastes $10.00 in fuel for every $1.00 of Arch Brick thus saved.

You need a full Arch for full economy.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: 1938	1937
Chicago, Milwaukee, St. Paul & Pacific	July	10,951	$6,813,905	$785,011	$8,383,403	$1,369,986	$1,584,998	$250,318	$3,347,830	$6,924,690	82.6	$1,458,713	$684,713	$264,276	$506,632
	7 mos.	10,958	43,331,247	4,373,289	52,853,469	7,436,155	10,941,158	1,606,521	22,469,883	45,046,318	85.2	7,807,151	2,642,151	—77,814	4,868,271
Chicago, Rock Island & Pacific	July	7,355	6,333,159	681,515	7,518,059	1,113,993	1,272,355	227,747	2,550,863	5,469,974	72.8	2,048,085	1,566,095	1,091,841	1,464,282
	7 mos.	7,453	33,831,660	4,324,802	41,628,212	5,885,620	8,526,733	1,625,444	17,727,003	36,010,782	86.5	5,617,430	2,172,472	—128,279	2,135,383
Chicago, Rock Island & Gulf	July	627	541,119	27,328	673,799	115,265	39,595	19,285	153,720	352,631	52.3	321,168	294,924	193,302	189,207
	7 mos.	627	2,111,761	194,617	2,953,654	487,943	262,834	135,765	1,001,113	2,063,849	69.8	889,805	712,631	121,933	347,005
Chicago, St. Paul, Minneapolis & Omaha	July	1,646	1,146,294	151,096	1,399,165	256,240	262,360	30,376	647,152	1,264,024	90.3	135,141	17,181	—92,271	—75,424
	7 mos.	1,648	7,454,152	836,396	8,936,382	1,195,302	1,653,704	262,857	4,439,803	8,017,523	89.7	918,859	160,160	—547,274	—600,203
Clinchfield Railroad	July	308	401,502	4,319	411,383	38,885	84,179	18,389	93,120	253,012	61.5	158,371	108,978	121,036	232,706
	7 mos.	308	3,131,675	26,185	3,195,607	266,240	704,396	131,671	709,806	1,928,965	60.4	1,266,642	917,482	1,003,839	1,875,341
Colorado & Southern	July	979	449,752	42,187	534,700	78,031	85,754	7,072	216,437	415,017	77.6	119,683	57,429	38,461	107,738
	7 mos.	979	2,853,186	217,098	3,408,703	330,939	792,746	91,993	1,496,758	2,903,260	85.2	505,443	—1,070	—131,882	466,152
Fort Worth & Denver City	July	902	684,322	66,947	744,267	58,724	72,420	17,967	201,321	385,603	51 8	358,664	324,070	266,803	589,537
	7 mos.	902	3,598,587	383,619	3,919,074	393,170	670,343	126,387	1,327,038	2,754,607	70.3	1,164,467	893,472	569,023	1,384,908
Columbus & Greenville	July	168	79,916	7,684	93,139	18,843	13,976	4,233	33,101	79,504	85.4	13,635	6,461	7,388	—7,013
	7 mos.	168	562,095	49,811	654,435	120,497	99,004	30,115	251,959	575,978	88.0	78,457	33,633	34,030	18,674
Delaware & Hudson	July	831	1,358,316	122,208	1,567,408	198,872	264,233	50,169	681,126	1,296,374	82.7	271,034	123,256	125,826	177,260
	7 mos.	831	10,569,318	616,093	11,737,269	1,161,877	2,122,176	311,868	5,076,124	9,422,972	80.3	2,314,297	1,246,461	1,226,204	2,282,258
Delaware, Lackawanna & Western	July	986	2,310,294	621,707	3,350,563	385,404	719,874	114,124	1,712,215	3,048,398	91.0	302.165	—134,835	—169,852	273,957
	7 mos.	986	18,027,741	3,878,990	24,950,661	1,887,912	4,553,321	801,732	12,573,976	20,723,274	83.1	4,227,387	1,211,387	933,824	4,153,367
Denver & Rio Grande Western	July	2,563	1,468,943	203,461	1,770,727	365,131	519,042	63,081	674,578	1,707,191	96.4	63,536	—124,219	—210,054	—300,198
	7 mos.	2,569	10,086,084	837,239	11,597,498	1,808,973	3,498,316	445,619	4,621,192	10,977,928	94.7	619,570	—918,144	—1,329,599	—817,518
Denver & Salt Lake	July	232	92,084	8,053	108,462	29,555	28,976	2,384	42,213	111,442	102.7	—2,980	—31,705	16,270	—13,189
	7 mos.	232	864,381	44,626	970,946	165,654	256,426	17,247	338,631	848,923	87.4	122,023	—78,121	245,029	399,404
Detroit & Mackinac	July	242	60,547	3,027	70,899	17,128	10,661	843	26,312	57,843	81.6	13,046	9,525	5,389	3,969
	7 mos.	242	361,309	18,134	424,755	83,979	79,401	6,984	173,444	365,286	86.0	59,469	40,281	14,963	44,152
Detroit & Toledo Shore Line	July	50	139,030	.....	139,018	14,198	16,660	8,582	53,032	99,443	71.5	39,575	22,175	—11,435	57,703
	7 mos.	50	1,321,216	.....	1,323,950	137,531	145,096	64,383	412,465	810,750	61.2	513,200	365,723	102,807	681,106
Detroit, Toledo & Ironton	July	472	328,941	229	346,568	44,064	71,500	10,298	101,455	243,458	70.2	103,110	61,792	71,284	118,697
	7 mos.	472	2,679,430	1,345	2,792,611	324,046	562,480	78,525	797,778	1,887,377	67.6	905,234	586,591	540,008	1,578,773
Duluth, Missabe & Iron Range	July	540	1,168,454	1,712	1,412,518	141,593	170,972	3,715	260,171	603,544	42.7	808,974	703,806	703,715	3,128,083
	7 mos.	540	3,607,568	10,874	4,265,573	874,843	1,441,023	30,002	1,396,640	3,973,124	93.1	292,449	—111,652	—113,363	8,214,915
Duluth, Winnipeg & Pacific	July	179	83,696	2,121	88,721	28,164	28,034	2,304	39,754	102,363	115.4	—13,642	—21,355	—30,817	—6,828
	7 mos.	179	614,702	9,799	644,273	168,145	156,819	16,056	310,270	681,103	105.7	—36.830	—91,677	—190,074	7,173
Elgin, Joliet & Eastern	July	435	712,524	Dr. 1	832,045	96,422	193,603	14,152	370,731	706,506	84.9	125,539	9,615	19,480	424,452
	7 mos.	435	5,280,355	21	5,943,481	694,215	1,485,861	102,271	2,784,902	5,337,579	89.8	605,902	—76,346	—94,883	2,962,753
Erie	July	2,276	4,753,093	486,875	5,685,065	749,771	1,175,714	165,704	2,320,432	4,669,367	82.1	1,015,698	447,981	209,245	1,315,971
	7 mos.	2,276	31,771,325	2,844,131	37,600,475	4,256,103	8,421,530	1,187,858	16,331,772	31,976,099	85.0	5,624,376	1,698,655	—69,960	9,640,222
New Jersey & New York	July	46	13,771	35,858	51,324	5,502	11,369	380	38,857	57,410	111.9	—6,086	—13,340	—25,543	—27,579
	7 mos.	46	99,626	279,372	392,779	36,771	80,828	3,196	295,584	425,641	108.4	—32,862	—83,698	—172,313	—192,684
New York, Susquehanna & Western	July	143	183,280	19,554	212,834	25,952	23,331	2,995	93,668	158,817	74.6	54,017	21,855	—14,668	10,349
	7 mos.	143	1,531,985	153,390	1,764,285	173,265	184,667	22,114	723,898	1,200,795	68.1	563,490	338,227	54,912	278,910
Florida East Coast	July	685	198,421	81,466	322,678	113,108	135,023	19,800	169,159	475,684	147.4	—153,006	—229,490	—251,825	—213,407
	7 mos.	685	4,085,843	1,958,396	6,652,174	634,795	994,632	159,180	2,115,203	4,324,571	65.0	2,327,603	1,760,144	1,268,008	975,458
Georgia Railroad	July	329	235,248	14,222	268,122	27,887	48,543	18,566	125,469	234,157	87.3	33,965	18,164	29,490	21,350
	7 mos.	329	1,693,392	80,733	1,927,260	228,638	345,733	130,231	901,496	1,705,591	88.5	221,669	112,003	190,955	437,325
Georgia & Florida	July	408	78,548	2,262	83,941	18,367	18,495	8,181	33,539	83,914	100.0	27	—7,638	—5,416	1,148
	7 mos.	408	544,759	12,435	581,295	133,854	121,056	56,6[illegible]	245,110	594,809	102.3	—13,514	—67,636	—76,821	—7,877
Grand Trunk Western	July	1,032	1,221,626	103,729	1,416,669	222,381	262,892	44,967	662,864	1,270,321	89.7	146,348	32,251	—37,200	211,428
	7 mos.	1,032	8,371,785	553,243	9,642,121	1,493,851	2,151,931	308,027	5,025,617	9,509,359	98.6	132,762	—723,710	—1,207,122	2,033,433
Canadian National Lines in New England	July	172	109,464	20,833	141,023	39,935	20,766	2,804	57,456	126,407	89.6	14,616	—687	—21,890	—61,170
	7 mos.	172	641,483	47,723	747,363	197,942	162,136	18,967	416,465	827,661	110.7	—80,298	—187,433	—367,564	—323,886
Great Northern	July	8,072	5,601,734	548,309	6,701,700	941,454	1,129,523	189,064	2,207,392	4,737,503	70.7	1,964,197	1,215,499	1,069,519	2,625,527
	7 mos.	8,071	30,663,102	2,689,855	36,648,789	4,146,880	7,370,631	1,354,526	14,753,158	29,451,112	80.4	7,197,677	2,267,092	1,378,451	11,365,878

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A *Needless* 1/3 Reduction In Steam Area

This is what happened when cast steel return bends were butt-welded on to superheater tubing. The patch repair was expensive as fuel and water consumption went up and there was also a possibility of superheater failure.

The railroad now sends all of their old and unserviceable superheater units to us for REmanufacture. They have found that our exclusive process for machine-die-forging the ends of superheater tubing to form return bends and ball ends is the only process that will give them dependable superheater units at a negligible cost.

THE SUPERHEATER COMPANY

Representative of American Throttle Company, Inc.

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Canada: The Superheater Company, Ltd., Montreal

Superheaters • Feed Water Heaters • American Throttles
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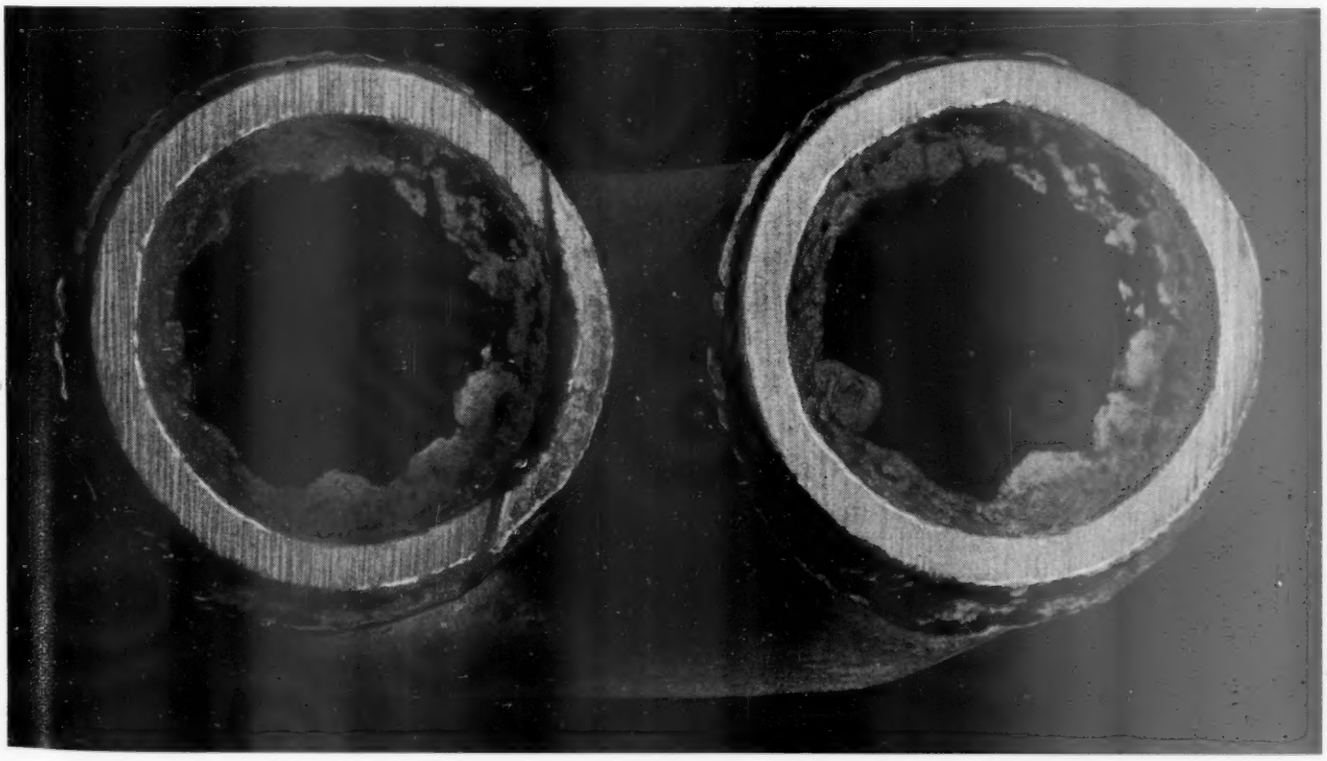

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1938	Net railway operating income 1937
Green Bay & Western	July	234	$124,776	$1,110	$132,192	$26,032	$15,815	$6,561	$42,829	$95,533	72.2	$36,659	$24,526	$15,285	$28,583
	7 mos.	234	803,399	4,037	840,139	147,466	111,318	44,610	307,148	640,705	76.2	199,434	122,265	72,562	138,679
Gulf & Ship Island	July	259	73,746	9,340	91,230	23,522	16,928	2,543	46,889	94,929	104.1	—3,699	—20,765	—28,589	—13,737
	7 mos.	259	607,835	51,199	737,136	145,800	106,734	18,863	391,467	698,848	94.8	38,288	—82,660	—151,204	9,936
Gulf, Mobile & Northern	July	824	470,959	24,396	515,623	66,598	75,280	40,450	143,185	361,576	70.1	154,047	105,047	71,127	112,714
	7 mos.	920	3,419,013	151,942	3,741,016	478,227	567,991	281,377	1,109,312	2,685,958	71.8	1,055,058	712,058	372,206	825,921
Illinois Central	July	4,951	6,035,901	748,822	7,248,958	760,756	1,424,435	156,688	2,723,622	5,374,211	74.1	1,874,747	1,234,035	1,175,023	785,166
	7 mos.	4,952	40,723,265	5,241,787	50,218,039	4,902,281	10,008,577	1,170,696	20,276,249	38,563,356	76.8	11,654,683	7,003,706	6,140,404	6,231,680
Yazoo & Mississippi Valley	July	1,619	989,406	74,487	1,126,961	114,505	157,077	26,224	418,748	760,820	67.5	366,141	228,974	159,882	35,400
	7 mos.	1,619	6,767,187	471,299	7,755,166	719,976	1,070,412	195,067	3,212,691	5,516,625	71.1	2,238,541	1,249,592	740,822	1,372,872
Illinois Central System	July	6,570	7,025,307	818,309	8,375,919	875,261	1,581,512	182,912	3,142,370	6,135,031	73.2	2,240,888	1,460,932	1,343,805	830,416
	7 mos.	6,571	47,490,452	5,713,086	57,973,205	5,622,257	11,078,989	1,365,763	23,488,940	44,079,981	76.0	13,893,224	8,238,839	6,945,726	7,671,702
Illinois Terminal	July	496	361,539	60,182	458,250	54,519	65,456	15,544	160,286	315,906	68.94	142,344	98,677	82,368	98,016
	7 mos.	496	2,277,948	418,666	2,951,513	343,568	465,041	110,679	1,116,954	2,162,657	73.27	788,856	461,707	358,882	818,104
Kansas City Southern	July	879	968,776	22,831	1,102,672	114,145	154,657	50,325	315,908	695,401	63.1	407,271	305,271	255,780	335,607
	7 mos.	879	6,792,123	128,621	7,732,817	795,328	1,047,598	353,357	2,296,780	4,934,558	63.8	2,798,259	2,076,259	1,715,930	1,746,160
Kansas, Oklahoma & Gulf	July	327	187,750	454	190.678	20,010	12,084	8,803	44,003	91,335	47.9	99,343	78,516	60,267	117,972
	7 mos.	327	1,273,735	3,156	1,301,731	125,043	123,181	63,247	313,585	684,319	52.6	617,412	492,865	378,767	447,083
Lake Superior & Ishpeming	July	156	104,398	60	128,236	26,189	15,527	602	29,015	79,122	61.7	49,114	36,272	34,896	272,013
	7 mos.	156	412,576	422	470,143	186,257	170,933	4,781	174,643	584,682	124.4	—114,539	—268,724	—274,234	734,957
Lehigh & Hudson River	July	96	112,581	70	113,449	12,156	20,172	3,441	41,163	82,834	73.0	30,615	17,351	6,491	13,232
	7 mos.	96	794,811	987	800,411	63,592	147,877	25,844	299,425	582,435	72.8	217,976	128,045	39,206	121,474
Lehigh & New England	July	205	251,500	.....	254,328	25,562	52,122	6,741	93,509	191,380	75.2	62,948	46,676	48,182	29,302
	7 mos.	208	1,943,291	.....	1,959,887	215,421	430,492	49,276	704,151	1,497,279	76.4	462,608	319,929	369,357	498,913
Lehigh Valley	July	1,307	2,799,574	192,309	3,196,645	181,038	629,728	112,414	1,409,105	2,457,733	76.9	738,912	443,922	276,705	347,241
	7 mos.	1,307	20,411,541	1,283,657	23,194,527	1,315,544	4,537,472	786,729	10,649,063	18,210,366	78.5	4,984,161	2,943,029	1,616,913	3,583,287
Louisiana & Arkansas	July	606	479,607	9,764	505,789	64,211	62,913	31,623	131,609	312,173	61.7	193,616	148,751	127,737	124,830
	7 mos.	606	3,201,837	66,776	3,400,433	455,266	495,136	222,346	944,559	2,262,919	66.5	1,137,514	841,641	684,220	696,158
Louisiana, Arkansas & Texas	July	240	86,071	348	91,695	24,961	11,965	4,272	37,014	81,190	88.5	10,505	5,592	—5,792	11,076
	7 mos.	240	630,124	1,228	662,935	176,802	93,149	33,769	275,730	599,549	90.4	63,386	27,804	—55,969	39,377
Louisville & Nashville	July	4,938	5,274,122	566,026	6,256,748	655,836	1,377,818	184,547	2,352,019	4,828,059	77.2	1,428,689	872,467	971,279	1,295,521
	7 mos.	4,938	36,224,432	3,683,018	43,074,501	4,739,950	9,844,167	1,308,031	16,985,075	34,820,085	80.8	8,254,416	4,287,457	4,203,474	9,588,649
Main Central	July	996	639,405	114,638	842,084	145,632	126,249	12,148	341,016	661,822	78.6	180,262	106,073	84,498	125,192
	7 mos.	1,002	5,422,906	570,505	6,557,722	1,064,746	1,132,701	80,908	2,549,437	5,077,663	77.4	1,480,058	989,752	670,859	1,340,038
Midland Valley	July	352	122,160	15	124,149	14,037	11,155	2,612	29,547	63,895	51.5	60,254	48,460	42,484	64,062
	7 mos.	352	702,213	56	714,913	94,616	87,525	18,105	201,699	443,966	62.1	270,947	186,816	150,271	252,705
Minneapolis & St. Louis	July	1,523	714,294	13,036	762,190	144,765	117,745	44,109	284,196	630,727	82.8	131,463	88,277	24,099	10,727
	7 mos.	1,525	4,462,525	66,090	4,764,059	720,302	846,646	304,405	1,936,474	4,050,698	85.0	713,361	409,086	131,320	12,518
Minneapolis, St. Paul & Sault Ste. Marie	July	4,297	1,724,770	166,607	2,088,761	325,603	381,375	63,472	906,970	1,771,812	84.8	316,949	130,339	—7,637	445,958
	7 mos.	4,298	11,058,301	658,786	12,864,224	1,974,405	2,612,500	426,854	6,295,515	11,927,069	92.7	937,155	—319,369	—1,162,324	1,247,723
Duluth, South Shore & Atlantic	July	549	151,443	14,551	185,688	34,285	26,493	3,695	74,598	145,574	78.4	40,114	26,617	23,034	99,076
	7 mos.	549	845,131	82,146	1,027,581	236,409	211,908	29,798	526,008	1,032,092	100.4	—4,511	—97,242	—129,017	350,299
Spokane International	July	164	62,519	1,056	69,229	16,611	8,255	2,068	22,112	53,731	77.6	15,498	10,157	7,359	5,896
	7 mos.	164	354,677	8,196	404,310	106,389	54,311	14,955	150,778	359,380	88.9	44,930	8,778	—7,410	36,151
Mississippi Central	July	150	62,046	2,315	66,225	8,972	8,069	6,887	18,721	47,346	71.5	18,879	14,394	10,387	11,524
	7 mos.	150	416,909	12,942	444,539	80,520	68,235	50,009	147,317	380,077	85.5	64,462	31,902	—2,392	16,913
Missouri & Arkansas	July	365	69,174	2,088	76,448	18,224	8,926	5,156	26,473	63,175	82.6	13,273	9,349	1,160	5,508
	7 mos.	365	489,389	10,835	536,865	146,516	75,841	36,710	202,888	492,128	91.7	44,737	16,712	—35,727	—4,913
Missouri-Illinois	July	193	80,024	698	82,966	21,802	11,993	2,774	26,420	68,834	83.0	14,132	7,970	938	27,718
	7 mos.	193	566,270	3,467	582,209	123,861	91,261	19,643	212,915	484,061	83.1	98,148	53,707	—4,961	144,574
Missouri-Kansas-Texas Lines	July	3,294	2,357,468	183,952	2,779,507	340,321	374,494	107,131	926,611	1,870,330	67.3	909,177	675,540	461,158	369,400
	7 mos.	3,294	12,995,383	1,220,677	15,796,942	2,326,310	2,601,399	777,060	6,458,588	13,088,840	82.9	2,708,102	1,429,824	137,215	1,996,482
Missouri Pacific	July	7,173	6,840,230	450,818	7,893,462	1,211,172	1,310,297	237,155	2,567,679	5,575,854	70.6	2,317,608	1,817,752	1,397,683	3,033,901
	7 mos.	7,174	37,952,772	2,898,190	44,970,712	6,772,842	8,794,141	1,680,403	17,728,250	36,843,452	81.9	8,127,260	4,676,694	1,986,115	7,232,975

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: 1938	1937
Gulf Coast Lines	July	1,767	$777,064	$43,125	$872,534	$186,171	$182,168	$46,590	$333,862	$794,151	91.02	$78,383	$6,177	—$49,974	$163,736
	7 mos.	1,767	8,457,916	282,853	9,141,274	1,347,601	1,327,354	324,220	2,854,864	6,191,270	67.73	2,950,004	2,436,381	1,632,422	2,643,002
International Great Northern	July	1,155	791,944	95,011	980,744	164,323	196,961	31,181	430,206	882,753	90.01	97,991	38,751	—34,157	205,649
	7 mos.	1,155	5,659,197	546,751	6,935,467	1,073,547	1,365,600	221,238	3,161,731	6,208,980	89.53	726,487	307,259	—379,442	226,381
Mobile & Ohio	July	1,194	839,442	35,218	910,674	107,415	145,000	41,053	330,713	668,906	73.5	241,768	182,429	112,172	126,952
	7 mos.	1,194	5,987,711	189,750	6,519,722	800,585	1,143,758	295,714	2,574,156	5,119,899	78.5	1,399,823	977,097	442,689	849,705
Monongahela	July	172	245,114	683	247,267	18,711	18,231	466	58,416	98,782	39.9	148,485	118,320	53,156	72,459
	7 mos.	172	1,742,253	5,078	1,758,600	144,657	133,074	3,432	432,305	736,151	41.9	1,022,449	809,452	337,932	742,549
Montour	July	56	141,776	.....	144,018	14,475	37,463	969	30,001	89,976	62.5	54,042	32,048	60,841	131,991
	7 mos.	56	806,861	.....	818,191	69,865	250,990	6,889	229,334	602,997	73.7	215,194	97,136	274,154	638,630
Nashville, Chattanooga & St. Louis	July	1,116	884,251	77,086	1,066,582	106,388	190,932	62,589	431,799	845,782	79.3	220,800	150,744	140,962	149,834
	7 mos.	1,116	6,222,962	633,672	7,687,850	831,684	1,342,658	457,270	3,203,900	6,238,681	81.1	1,449,169	924,366	746,486	865,121
Nevada Northern	July	166	30,971	386	35,651	10,065	2,754	1,209	8,595	26,906	75.5	8,751	—2,143	1,425	22,504
	7 mos.	166	249,341	7,526	292,116	57,551	22,869	8,589	68,822	192,104	65.8	100,012	36,798	60,779	139,934
New York Central	July	11,077	15,015,719	5,309,874	22,891,310	2,465,626	4,192,968	606,537	9,909,434	18,393,988	80.4	4,497,322	1,793,708	970,884	3,204,426
	7 mos.	11,079	107,977,498	34,448,169	161,833,749	17,310,852	32,641,018	3,919,896	70,906,860	133,604,993	82.6	28,228,756	8,056,107	1,079,071	25,779,620
Pittsburgh & Lake Erie	July	233	1,062,202	42,340	1,139,888	121,188	351,715	28,019	422,994	1,001,153	87.8	138,735	29,176	180,603	545,681
	7 mos.	233	6,320,059	307,849	6,927,657	716,088	2,459,823	197,150	2,991,220	6,923,808	99.9	3,849	—788,535	415,669	2,865,166
New York, Chicago & St. Louis	July	1,704	2,757,884	110,497	2,970,829	321,860	480,231	116,787	1,102,082	2,139,297	72.0	831,532	663,852	411,612	632,337
	7 mos.	1,704	18,431,979	519,714	19,661,702	2,086,329	3,320,266	836,819	7,883,839	14,960,358	76.1	4,701,344	3,322,763	1,587,661	4,991,381
New York, New Haven & Hartford	July	2,020	3,054,672	2,304,866	5,974,447	898,012	944,231	115,848	2,432,148	4,729,216	79.2	1,245,231	760,231	166,865	203,240
	7 mos.	2,022	21,335,814	14,932,413	40,676,805	5,639,649	7,417,494	756,933	17,580,973	33,958,031	83.5	6,718,774	3,173,774	—493,131	3,918,136
New York Connecting	July	21	255,877	.....	261,216	35,916	10,450	.....	28,437	76,024	29.1	185,192	143,343	85,589	141,399
	7 mos.	21	1,304,026	.....	1,355,348	129,316	77,011	.....	210,452	425,727	31.4	929,621	650,510	447,889	936,267
New York, Ontario & Western	July	576	406,884	138,223	597,146	77,609	124,965	10,388	265,948	503,177	84.3	93,969	40,627	156	26,724
	7 mos.	576	3,147,436	220,673	3,694,742	484,274	893,707	95,251	1,830,994	3,483,228	94.3	211,514	—160,997	—378,550	35,529
Norfolk & Western	July	2,200	5,667,260	182,799	6,015,160	614,437	1,199,845	132,479	1,526,381	3,661,691	60.9	2,353,469	1,570,469	1,676,993	2,417,660
	7 mos.	2,200	35,993,357	1,099,146	38,354,107	4,671,188	8,805,496	968,962	10,766,315	26,545,536	69.2	11,808,571	6,043,384	7,071,063	18,858,879
Norfolk Southern	July	809	326,750	8,375	348,011	62,906	52,028	22,967	133,447	294,061	84.5	53,950	19,659	11,589	17,838
	7 mos.	809	2,487,153	32,872	2,625,631	442,717	364,215	166,741	960,457	2,101,579	80.0	524,052	283,479	179,692	348,470
Northern Pacific	July	6,721	3,832,915	476,614	4,795,513	955,932	945,980	159,736	1,964,361	4,317,049	90.0	478,464	—121,865	108,230	627,216
	7 mos.	6,721	23,780,084	2,348,656	29,040,588	4,585,111	6,663,862	1,232,683	12,590,315	27,030,946	93.1	2,009,642	—2,055,739	—46,603	4,886,206
Northwestern Pacific	July	352	214,869	65,966	311,891	71,600	48,782	3,299	167,635	302,031	96.8	9,860	—10,549	—31,954	64,453
	7 mos.	352	1,060,839	355,991	1,581,184	541,989	344,362	26,557	1,128,129	2,125,819	134.4	—544,635	—677,638	—760,883	—2,041
Oklahoma City-Ada-Atoka	July	132	35,261	453	37,447	10,988	1,774	852	10,229	25,954	69.3	11,493	7,750	1,920	9,206
	7 mos.	132	235,507	2,593	250,741	59,927	17,138	6,084	77,061	174,699	69.7	76,042	53,495	14,884	44,646
Pennsylvania	July	10,306	21,198,344	5,477,222	29,458,498	2,538,906	4,904,722	680,045	10,800,886	20,235,331	68.7	9,223,167	5,951,646	5,014,946	7,322,194
	7 mos.	10,306	139,723,577	37,715,612	196,983,150	18,802,273	35,975,586	4,673,760	77,548,405	145,933,912	74.1	51,049,238	30,115,158	24,634,550	44,917,744
Long Island	July	394	496,767	1,748,393	2,339,517	137,923	295,152	13,562	953,598	1,432,002	61.2	907,515	450,050	292,679	191,270
	7 mos.	394	3,458,491	9,126,426	13,181,704	1,096,984	2,142,631	55,374	6,638,009	10,171,689	77.2	3,010,015	1,021,614	—55,777	—29,274
Pennsylvania-Reading Seashore Lines	July	412	198,526	512,997	737,260	70,934	83,218	8,604	361,636	543,047	73.7	194,213	67,226	—70,252	71,202
	7 mos.	412	1,409,537	1,336,628	2,884,374	511,001	534,304	51,841	1,958,237	3,171,741	110.0	—287,367	—886,043	—1,384,943	—1,058,883
Pere Marquette	July	2,115	1,585,556	152,972	1,889,392	304,127	457,790	62,476	782,384	1,701,761	90.1	187,631	65,382	—74,614	455,677
	7 mos.	2,115	11,914,361	570,210	13,266,491	2,096,011	3,233,448	442,091	5,823,327	12,265,144	92.5	1,001,347	—38,590	—798,068	3,016,137
Pittsburg & Shawmut	July	101	29,223	.....	29,556	10,125	10,920	1,586	10,589	37,011	125.2	—7,455	—8,004	—7,044	2,498
	7 mos.	101	268,087	947	272,146	68,479	106,148	11,436	99,143	317,293	116.6	—45,147	—55,310	—48,094	16,387
Pittsburgh & West Virginia	July	136	251,552	.....	268,092	53,657	56,676	15,971	60,036	206,717	77.1	61,375	40,203	55,680	73,797
	7 mos.	136	1,474,739	.....	1,594,013	245,716	369,663	112,872	407,285	1,288,241	80.8	305,772	190,178	285,781	754,292
Pittsburg, Shawmut & Northern	July	190	55,020	.....	55,503	12,251	10,097	1,064	22,886	52,490	94.6	3,013	—1,647	—7,438	—7,850
	7 mos.	190	472,466	1	477,194	91,649	82,972	7,501	182,766	407,205	85.3	69,989	35,387	—19,827	—25,422
Reading	July	1,451	3,035,047	258,547	3,459,593	290,827	596,038	74,391	1,578,495	2,689,225	77.7	770,368	587,991	647,095	1,053,300
	7 mos.	1,452	23,869,776	1,855,732	26,991,815	1,672,616	5,456,246	535,441	12,008,465	20,730,037	76.8	6,261,778	4,306,139	4,543,115	8,980,469
Richmond, Fredricksburg & Potomac	July	118	358,359	133,921	558,269	57,377	113,131	9,073	227,685	442,202	79.2	116,067	64,341	46,386	91,764
	7 mos.	118	2,589,887	1,452,151	4,724,361	472,553	931,360	67,033	1,982,835	3,778,400	80.0	945,961	588,563	256,231	797,027

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1938—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1938	Net railway operating income 1937
Rutland	July	407	$151,841	$29,849	$235,673	$31,434	$53,400	$10,651	$137,144	$247,843	105.2	—$12,170	—$38,569	—$40,551	$3,431
	7 mos.	407	1,063,761	191,320	1,635,171	247,862	418,836	75,211	988,595	1,838,425	112.4	—203,254	—405,089	—411,724	33,461
St. Louis-San Francisco	July	4,884	3,170,299	305,240	3,771,566	604,908	950,307	116,396	1,416,853	3,262,945	86.5	508,621	142,565	151,367	1,491,273
	7 mos.	4,885	20,020,088	1,899,767	24,034,473	4,018,918	6,040,003	800,452	9,977,925	22,132,107	92.1	1,902,366	—442,409	—609,848	3,904,701
St. Louis, San Francisco & Texas	July	266	186,516	811	193,529	24,415	18,139	7,937	62,146	119,625	61.8	73,904	65,943	35,039	105,715
	7 mos.	266	948,330	3,772	991,451	168,928	105,662	55,567	398,411	774,321	78.1	217,130	160,304	—58,386	—98,898
St. Louis Southwestern Lines	July	1,706	1,376,789	27,981	1,463,661	191,355	235,150	79,766	548,629	1,143,931	78.2	319,730	214,098	61,688	290,845
	7 mos.	1,706	9,766,330	162,080	10,357,869	1,478,906	1,442,869	566,710	3,832,345	7,856,009	75.8	2,501,860	1,768,883	687,228	1,152,087
Seaboard Air Line	July	4,318	2,110,461	266,571	2,619,943	489,634	656,636	149,621	1,149,581	2,598,894	99.2	21,049	—203,951	—185,161	158,928
	7 mos.	4,318	18,080,623	3,302,114	23,711,824	3,380,390	4,791,607	1,160,128	9,285,411	19,984,287	84.3	3,727,537	1,642,537	870,589	3,115,191
Southern Railway	July	6,602	5,860,071	781,755	7,177,013	897,918	1,256,535	143,776	2,592,273	5,171,399	72.1	2,005,614	1,401,456	1,061,438	1,166,125
	7 mos.	6,607	39,373,873	5,038,711	48,471,401	6,357,851	8,933,369	1,069,597	18,496,046	37,017,843	76.4	11,453,558	7,071,597	4,631,026	10,433,623
Alabama Great Southern	July	315	464,891	78,053	576,605	84,613	127,578	12,583	168,708	415,992	72.1	160,613	103,378	140,506	114,699
	7 mos.	315	2,966,586	356,751	3,585,424	596,874	908,428	84,722	1,185,857	2,935,523	81.9	649,901	300,125	574,552	754,462
Cincinnati, New Orleans & Texas Pacific	July	337	1,179,063	80,312	1,323,007	172,283	258,256	26,061	337,622	841,267	63.6	481,740	348,993	401,186	524,841
	7 mos.	337	7,219,769	706,127	8,441,796	1,201,494	1,839,124	192,703	2,298,670	5,899,208	69.9	2,542,588	1,718,624	1,957,888	3,111,575
Georgia Southern & Florida	July	398	108,068	21,736	142,689	29,286	36,040	1,706	68,210	140,435	98.4	2,254	—14,507	—15,372	18,769
	7 mos.	398	705,175	323,839	1,164,476	219,605	243,550	13,046	544,145	1,075,572	92.4	88,904	—31,108	—52,973	175,651
New Orleans & Northeastern	July	204	213,595	31,555	259,206	26,829	34,615	6,159	70,947	149,627	57.7	109,579	79,475	56,870	83,454
	7 mos.	204	1,471,229	138,006	1,719,703	243,966	252,425	43,614	553,286	1,178,973	68.6	540,730	327,575	159,228	388,857
Northern Alabama	July	100	34,965	1,216	37,738	7,782	1,407	867	13,267	25,444	67.4	12,294	6,341	60	6,453
	7 mos.	100	285,751	8,070	304,440	67,691	9,287	7,877	110,784	210,747	69.2	93,693	53,591	—24,763	76,380
Southern Pacific	July	8,707	9,764,450	2,206,211	13,103,958	1,479,765	2,174,135	344,962	5,007,668	9,816,164	74.9	3,287,794	2,073,377	1,351,400	1,883,172
	7 mos.	8,714	62,074,630	12,725,156	82,480,833	10,317,349	15,346,451	2,441,277	34,695,135	68,361,713	82.9	14,119,120	5,696,051	809,441	11,176,466
Southern Pacific Steamship Lines	July	....	543,745	33,041	602,842	12,342	89,002	15,687	364,786	497,061	82.5	105,781	91,575	91,337	4,086
	7 mos.	....	3,443,162	171,445	3,793,081	97,533	681,042	121,897	2,766,249	3,783,494	99.7	9,587	—97,955	—99,456	53,468
Texas & New Orleans	July	4,416	2,738,500	326,072	3,341,298	534,804	583,107	119,915	1,244,904	2,694,758	80.7	646,540	337,609	180,657	173,303
	7 mos.	4,418	19,738,677	1,956,381	23,669,660	3,659,178	4,396,498	855,755	8,759,313	19,188,104	81.1	4,481,556	2,322,733	939,951	2,812,341
Spokane, Portland & Seattle	July	947	597,949	57,104	701,464	104,594	88,585	12,271	249,546	486,149	69.3	215,315	138,541	90,423	115,096
	7 mos.	947	3,687,569	279,673	4,285,228	762,531	615,860	72,282	1,699,616	3,355,827	78.3	929,401	415,901	135,238	979,006
Tennessee Central	July	287	145,391	5,288	158,885	28,817	23,239	6,050	60,525	128,360	80.8	30,525	19,029	6,169	31,185
	7 mos.	287	1,092,540	29,869	1,187,708	209,283	181,459	41,914	458,776	962,009	81.0	225,699	142,668	37,912	188,344
Texas & Pacific	July	1,937	1,862,852	217,191	2,246,549	254,681	421,383	70,023	716,243	1,580,217	70.3	666,332	515,237	366,260	536,515
	7 mos.	1,937	12,136,067	1,438,929	14,813,173	1,559,225	2,587,902	510,259	5,057,218	10,544,943	71.2	4,268,230	3,234,992	2,343,865	3,590,711
Texas Mexican	July	162	57,352	430	67,010	11,107	11,898	3,025	35,973	67,662	100.9	—652	—7,219	—9,460	22,790
	7 mos.	162	531,824	3,387	621,882	98,609	100,044	22,090	263,147	525,715	84.5	96,167	70,793	38,416	197,206
Toledo, Peoria & Western	July	239	185,850	.....	189,442	40,229	13,534	15,735	43,177	122,942	64.9	66,500	50,343	31,368	24,306
	7 mos.	239	1,197,784	21	1,216,083	308,638	89,169	114,762	289,621	878,348	72.2	337,735	243,633	143,097	156,131
Union Pacific System	July	9,909	10,010,611	1,806,003	12,881,135	1,732,272	2,045,819	352,600	4,231,512	9,078,216	70.5	3,802,919	2,653,953	1,884,225	1,755,291
	7 mos.	9,910	58,665,090	9,402,685	75,181,254	7,845,645	14,106,025	2,448,340	27,280,516	56,503,165	75.2	18,678,089	10,018,187	5,737,342	7,087,277
Utah	July	111	28,018	.....	28,091	9,125	10,917	438	9,265	33,345	118.7	—5,254	—9,923	—9,707	—8,275
	7 mos.	111	299,550	.....	300,276	69,387	117,530	2,136	97,951	313,335	104.3	—13,059	—60,651	—70,768	30,648
Virginian	July	638	1,466,943	5,768	1,520,237	146,609	339,910	21,704	249,060	785,794	51.7	734,443	559,443	616,793	723,120
	7 mos.	624	10,050,368	23,498	10,445,060	1,006,426	2,450,349	158,526	1,764,960	5,570,774	53.3	4,874,286	3,579,286	3,969,336	5,180,461
Wabash	July	2,434	3,195,895	234,985	3,648,436	458,905	593,771	146,217	1,405,222	2,759,152	75.6	889,284	693,785	347,436	412,809
	7 mos.	2,434	19,312,195	1,389,245	22,318,383	2,850,610	3,935,984	1,039,377	9,755,336	18,649,023	83.6	3,669,360	2,214,399	—240,279	3,020,032
Ann Arbor	July	294	262,173	3,760	280,851	30,637	58,296	13,280	123,873	238,999	85.1	41,852	21,934	8,099	20,877
	7 mos.	294	1,834,688	19,752	1,915,994	195,469	437,985	91,153	901,492	1,712,530	89.4	203,464	64,315	—33,832	210,987
Western Maryland	July	879	984,011	20,577	1,041,826	123,414	229,461	34,462	297,261	727,670	69.8	314,156	242,535	241,796	402,213
	7 mos.	879	7,137,203	60,935	7,464,719	904,393	1,736,169	259,149	2,204,092	5,374,338	72.0	2,090,381	1,574,032	1,620,971	2,895,982
Western Pacific	July	1,208	1,123,902	50,538	1,203,516	246,432	229,591	58,957	482,223	1,068,362	88.8	135,154	49,699	—23,638	—22,357
	7 mos.	1,208	6,728,266	193,373	7,141,761	2,380,322	1,622,091	405,287	3,374,309	8,131,986	113.9	—990,225	—1,618,624	—2,027,672	—840,215
Wheeling & Lake Erie	July	513	933,219	1,245	996,004	82,118	173,200	33,118	330,141	647,991	65.1	348,013	221,296	256,777	439,182
	7 mos.	513	5,255,510	11,396	5,522,154	526,153	1,239,840	231,619	2,107,880	4,294,906	77.8	1,227,248	542,899	814,015	2,984,937